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THE ENTERPRISES

A proposal to reconceptualize the operational arm of the International Seabed Authority to manage the common heritage of mankind

by

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Introduction

1. The purpose of the present paper is to submit new suggestions with regard to the still unresolved question of who may exploit the international seabed area in the light of the principle of common heritage of mankind and of effective implementation of the United Nations General Assembly resolution 2749 (XXV) (Declaration of principles).

2. There is considerable controversy with regard to the role of the proposed International Seabed Authority (the Authority) in the exploitation of the resources of the international seabed area.

3. The Revised Single Negotiating Text (RSNT) in Part I, Article 22, established a dual or parallel system of resource exploitation: the proposed Authority may conduct resource exploitation activities directly; at the same time such activities may be undertaken "in association with the Authority and under its control...by States Parties, State Enterprises or persons natural or juridical which possess the nationality of State Parties...."

4. Annex I to Part I elaborates, inter alia, the qualifications and mode of selection of applicants wishing to undertake resource exploitation activities as well as provisions designed to safeguard the interests of the Authority. Paragraph 8 (d) (i) in particular provides that when applying for a contract an applicant must indicate the coordinates either of one area twice as large as the intended mine site, or two areas of equivalent commercial value. If a contract is awarded, the Authority retains one of the two mine sites for exploitation either conducted directly by the Enterprise or, at its discretion, in association with the Authority, by developing countries or other entities sponsored by them and under their effective control (the so-called banking system). During the informal negotiations in Geneva in March, 1977, it was proposed to modify the wording of these provisions without, however, changing the substance of the parallel system embodied in Article 22 of Part I of the RSNT.

5. Annex II to Part I contains the Statute of the Enterprise which is conceived as the organ of the Authority which directly conducts resource exploration and exploitation activities in the international seabed area pursuant to Article 22 of Part I. The Enterprise has a Governing Board of 36 Members elected by the Assembly of the Authority on the same basis as members of the Council (2/3 geographical respresentation, 1/3 representation of special interests); a Director-General elected by the Board and a staff of civil servants. The Enterprise may undertake projects with the approval of the Council on the basis of a written plan of work; to the extent that the Enterprise does not possess the goods and services required for its operations it may procure them through the award of contracts. The Enterprise has title to all minerals and processed substances produced by it which must be marketed in accordance with rules, regulations and procedures adopted by the Council of the Authority.

6. Two proposals designed to provide the Enterprise with the capital required to undertake operations have been introduced thus far in the disucssions.

a. The United States offered to contribute up to 20 percent of the capital investment required to launch a first project of the Enterprise, provided the remainder is contributed by other countries.

b. Ambassador Castaneda of Mexico prepared a working paper proposing the payment of fees, taxes, royalties to the Authority; access to international financial institutions for the Enterprise, as well as useful measures for the transfer of technology.

7. Another proposal to strengthen the Authority has been to make cooperation with the Enterprise compulsory. This, it has been suggested, could be done in either or two ways.

a. One might adopt a sort of rotating system, whereby a certain number of contracts, during a determined period of time, must be concluded between States and companies and the Authority; whereas an equal number of contracts, during another determined period, must be concluded between States and companies and the Enterprise; or

b. It could be provided that for each contract with the Authority, involving a non-reserved area of the "banking system," a company or State must conclude a contract with the Enterprise for the development of an equivalent "reserved" area. Or, to put it in another way, a company or State must develop both parts it has prospected under the "banking system" -- one-half under conditions deemed favorable to the private sector, under contract with the Authority, the other half, under conditions deemed less favorable, in assocation with the Enterprise.

8. Analogies have been drawn between a "mixed economy" within a State, consisting of a public and a private sector, and the parallel or dual or mixed system proposed in the RSNT.

9. The dual system of international seabed-resource exploitation contained in the RSNT and summarized above, however, is still highly controversial; more importantly, the system, even if eventually adopted by the Law of the Sea Conference, would not be viable.

10. In order to establish a viable system of exploitation of the resources of the international seabed area, the relevant legal and economic facts must be fully taken into account. Among these fact are the following:

a. At the present time, the only commercially profitable minerals in the international seabed are manganese nodules;

b. Manganese nodules are an abundant resource: more than 300 commercially mineable deposits, probably containing several hundred million tons of nodules, have been discovered;

c. Probably 15-20% of commercially mineable manganese nodule deposits are situated in seabed areas under national jurisdiction as a result of the archipelagic and economic zone provisions (Part II of the RSNT) and it is to be foreseen that additional commercially mineable deposits (perhaps as many as another 20-30 percent) will be brought under national jurisdiction as a result of the flexible baseline provisions contained in

Part II of the RSNT, and of the inadequate definition of the limits of the international seabed area (RSNT, Part I, article 2) which does not debar a State from redefining national jurisdictional limits previously notified to the International Seabed Authority;

d. The entities, public or private, having an interest in mining manganese nodules and possessing the capital, technology, and managerial skill required for this purpose, are very few. The situation that will prevail for the foreseeable future is one of abundance of resources and scarcity of capital, technology, and managerial skill.

11. Accordingly the International Seabed Authority will not enjoy a virtual monopoly of manganese nodule deposits. The Enterprise will have to cope not only with volatile world markets, as other private and public entities engaged in manganese nodule mining, but also with specific competition outside the control of the Authority, that is, with manganese nodule mining conducted in seabed areas under national jurisdiction as well as with land-based mining of the minerals contained in the nodules.

12. The parallel system proposed by the RSNT results from a simple addition of the main features of a licensing system, which is incompatible with the principle of the common heritage of mankind and therefore inacceptable to the majority of States, and the main features of an Enterprise system conceived as a political organ geared to production control rather than efficient management, therefore likely to be inefficient as an operational arm of the Authority and unacceptable to a minority of industrially developed States in possession of capital, technology and managerial skill. The simple addition of an unacceptable option and an unworkable option is not likely to result in a compromise that is both workable and acceptable.

13. The "banking system," which would be meaningful and beneficial to the authority in a situation of resource scarcity and abundance in capital, technology, and managerial skill, is instead meaningless in a situation of resource abundance and scarcity of capital, technology and managerial skill.

14. Considering past and present difficulties in raising capital for development aid, it is difficult to imagine that the U.S. proposal for financing a first project of the Enterprise be matched by other countries.

15. The Mexican proposal, whose chief merit resides in the fact that it puts the problem of financing the Enterprise in concrete and practical terms, may indeed have a catalytic effect in demonstrating the difficulties of capitalizing a new, high capital- and technology-intensive Enterprise from the revenues of half a dozen enterprises, having themselves invested enormous capitals.

16. As for the access to international financial institutions, it has been pointed out that amendments to the charters or statutes of these institutions, including the IBRD and the IMF are required to enable them to make loans and grants to the Authority for the purpose of financing the high-risk projects of the Enterprise. This, obviously will take time.

17. The compulsory "rotating system" described under paragraph 8a is not likely to be practical. If association with the Enterprise were to be somehow more favorable to the Authority and to developing countries than a contract with the Authority, the provision would hardly be acceptable to industrial States and their companies, because it would introduce an element of discrimination: Company X gets a "contract" of the kind it wanted, whereas Company Y has to work in association with the much disliked Enterprise under conditions that are not competitive with those under which Company X works. Or the conditions offered by the Enterprise are equivalent to those offered by the Authority, in which case the system would have no meaning for the Authority or, as a matter of fact, for anybody.

18. The compulsory system described under paragraph 8b would have other drawbacks: Either the area prospected by an applicant should be sufficiently large to be divided, as the RSNT suggests, and the contractor would be prepared to exploit half of it -- in this case it would not be reasonable to ask the contractor to exploit more than his investment capital and production plan would permit -- or, on the other hand, the area should be small enough for the contractor to exploit, half under contract from the Authority, half in association with the Enterprise, in which case he would be burdened with a system obviously not apt to enhance management efficiency.

19. By first admitting, and then proceeding to undo, a parallel system, one does not, and cannot, obtain a unitary system. A unitary system has to be set up as such from the beginning.

20. The analogy between the parallel system and the "mixed economy" within a State is misleading. There can be a public sector in the framework of a State able to raise taxes and administer a budget that can at least compete with, if not dominate, the private sector. Such a framework does not exist at the international level. Therefore the "public sector" remains unreal, and only the "private sector" is a reality.

21. In these circumstances it is suggested that the proposed parallel system be discarded and replaced by a single unitary system, designed to achieve the following objectives:

a. establish a single viable and flexible resource exploitation system based on cooperation between the Authority, States, and private industry;

b. establish effective Authority control over all mineral resource exploitation within the international seabed area, while guaranteeing maximum feasible access to the area to all States;

c. maximize active Authority and developing country participation in mineral resource exploitation in the area together with transfer of technology;

d. provide effective control of multinational corporations active in the area;

e. cope with the eventuality, or certainty, that nodules will be exploited, not only in the international area but also in areas under national jurisdiction.

22. It is suggested that when a resource exploitation project is submitted by a qualified applicant (State Party or public or private entity designated by a State Party or any combination thereof) is approved by the Authority, the applicant(s) be required to form an Enterprise controlled by the Authority. Each Enterprise shall be governed by a Governing Board. A part of the representatives on the Governing Board

shall be appointed by the participating entities, in proportion to their investment, while another part shall be elected by the Assembly of the Authority to assure (a) the control by the Authority, and (b) the participation of developing countries unable to invest capital. The Authority must provide 52% of the investment capital, including the value of the nodules in situ, which are the common heritage of mankind. The remaining capital, technology, and managerial skill are to be provided by the participating entities.

23. The above proposal is based on the INMARSAT Convention, from which it has taken over and adapted the following two principles:

a. relations between States Parties and public or private operators. The INMARSAT Convention distinguishes between "States Parties" and "Signatories." A "signatory" is an entity or enterprise, public or private, existing or established for the purpose, designated by a State Party to operate within the framework of the Convention. The relations between the State Party and its designated Signatory are regulated by applicable domestic law. The State Party provides guidance and instructions to its Signatory, but is not liable for financial obligations assumed by the Signatory except in certain cases. The INMARSAT Convention provides for an organization consisting of an Assembly, a Council, and a Directorate. The Assembly, which is the policy-making or "legislative" organ, is composed of representatives of States Parties, each having one vote, on the basis of the sovereign equality of States. The Council, which is the executive and operational arm of the organization, is composed of Signatories.

b. composition of the controlling organ (called Council in the INMARSAT Convention, Governing Board in the RSNT and in the present proposal). The Council of INMARSAT is composed as follows:

i. eighteen representatives of those Signatories, or groups of Signatories not otherwise represented, which have agreed to be represented as a group, which have the largest investment shares in the Organization;

> ii. Four representatives of Signatories not otherwise represented on the Council, elected by the Assembly, irrespective of their investment shares, in order to ensure that the principle of just geographical representation is taken into account, with due regard to the interests of the developing countries....

24. The INMARSAT Convention combines in one structure aspects of a (political) intergovernmental organization and an (economic) enterprise or business. The Seabed Authority is more complex. The Authority is a (political) intergovernmental organization with broad functions and responsibilities such as the framing of resource policy, the planning and coordination of the whole Enterprise system, scientific research, environmental policy, the protection of human life, the regulation of installations, the disposal of archeological finds, the coordination between seabed activities and other uses of ocean space. The Enterprises, on the other hand, are businesses, responsible for prospecting, exploring and exploiting the area, raising the nodules, processing and marketing metals. The Authority is composed of States Parties; the Enterprises are composed of Signatories.[1]

25. In addition it is interesting to note that a United States Congressman, Mr. McCloskey, has submitted a very similar suggestion with regard to "Federal Coordination, Planning and Regulation of Deep Seabed Resource Development."[2]

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[1]It is likely that, between now and 1985, there may be between half a dozen and a dozen Enterprises. Each one of the well-known consortia (Ocean Mining Associates; Kennecott Consortium; Summa Corporation; INCO Consortium) will want to form an Enterprise, and it is to be assumed that the Socialist countries will designate Signatories to form Enterprises, singly or jointly. Other, smaller or developing countries are not likely to apply directly. They will stand for election by the Assembly to the various Governing Boards. Any developing country will participate, this way, in at least one Enterprise.

[2]Section 201 of the Draft Bill provides that "only Enterprises organized in accordance with this Act may engage in deep seabed resource development"; therefore (Section 301) "any person who

26. The present proposal offers a dynamic, functional, and operational concept of the Enterprise. Enterprises, under the proposed system, exist only in relation to the work they perform. There are no idle or unemployed Enterprises; there is no need for the establishment of huge, centralized international bureaucracies.

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proposes to engage directly or indirectly in deep seabed resource development shall apply to the Secretary [of Commerce] for permission to form an Enterprise."

Within 60 days after the approval of an application for the formation of an Enterprise, the President of the United States shall appoint, by and with the advice and consent of the Senate, three individuals to the Board of Directors of the Enterprise (Section 304a). At the same time, the applicant shall appoint six individuals to the Board of Directors.

It is further provided that the President shall appoint two further individuals to the Board of Directors: one within 60 days after the Federal Share exceeds 30 percent, one within 60 days after the Federal Share exceeds 40 percent.

"Federal share" is defined in Section 401a as "the value of the reimbursable services provided by the Federal Government to an Enterprise expressed as a percentage of the equity value of the Enterprise." "Equity value of an Enterprise" means the adjusted basis of any assets held by that Enterprise plus the value of all reimbursable services provided by the Federal Government to that Enterprise, minus the liabilities of that Enterprise.

What should be noted here is the striking similarity between the McCloskey proposal at the national level and the present proposal at the international level. Both proposals provide for an Enterprise system, consisting of an indeterminate number of Enterprises, formed by joint venture between the Authority or, respectively, the Government, and other entities (companies) governed by a Board composed of members partly designated by the companies, partly appointed by the Government (or elected by the Authority).

Whatever the other intentions of the McCloskey Bill might be, it is these Enterprises that might be designated as Signatories to cooperate with the International Seabed Authority.

27. It should be noted that the proposal provides that the Authority must provide "at least" 52 percent of the investment capital and have "at least" 13 out of 25 seats on the Governing Board of any Enterprise. There is nothing in the proposal to preclude the possibility that the Authority might provide 90 percent of the investment capital and form a joint venture with only one developing country or a group of them. This is a long-term possibility which the industrial nations would have to take into account although it is indeed not likely that it will materialize during the next 25 years. But, at any rate, it is not the substance of the Enterprise concept put forward by the developing nations that would have to be changed; it is the form that they should accept to change.

28. The developed countries, on the other hand, would have to accept the notion, responding to a need keenly felt by the international community, that the international operations of multinational companies must be brought under effective public international control.

29. Both developed and developing nations should agree to separate the question of resource policy, which should be solved at the level of the Authority, from the question of management which relates to the structure and function of the Enterprise system.

30. Once this were agreed upon, the completion of Part I of the Convention would be relatively easy. And even though seabed mining is one of the minor uses of ocean space, the successful completion of Part I is the foundation for the successful conclusion of the whole Conference on the Law of the Sea -- or, at least, of its present phase.

DRAFT STATUTE

FOR ENTERPRISES

Article 1

Establishment of the Enterprises

1. Enterprises shall be established in conformity with the provisions of this Convention and its Annexes.

2. Each Party to the Convention shall sign the Statute for the Enterprises or shall designate a competent entity, public or private, subject to the jurisdiction of the Party, to sign the Statute.

Comment: Adapted from the INMARSAT Convention. It is assumed that Part I of the Convention, just like the SNT, will have several Annexes, the first dealing with Basic Conditions, the second containing the Statute for Enterprises. The INMARSAT wording has been modified to make it possible that new Enterprises are formed whenever desirable, once the Convention and the Statute, applicable to all Enterprises, whenever established, has been signed.

Article 2

Relations between a Party and its designated entity or entities

Where a Signatory is an entity designated by a Party,

(a) relations between the Party and the Signatory shall be governed by applicable domestic law;

(b) the Party shall provide such guidance and instruction as are appropriate and consistent with its domestic laws to ensure that the Signatory fulfils its responsibilities;

(c) the Party shall not be liable for obligations arising under Annex I of this Convention. The Party shall, however, ensure that the Signatory, in carrying out its obligations within the Enterprise, will not act in a manner which violates obligations which the Party has accepted under this Convention or under related international agreements;

(d) if the Signatory withdraws or its participation in an Enterprise is terminated, the Party shall act in accordance with Article 20.

Comment: Taken over from the INMARSAT Convention.

Domestic law is applicable only to the relations between a Party and its Signatory, not to relations between Parties or between Signatories or Parties and Signatories of other Parties. The law applicable to these relations is

(a) the Convention, including its Annexes;

(b) the Rules, Regulations and Procedures of the Authority;

(c) the terms of any material contracts;

(d) subject to the above, any relevant rules of generally recognized international law.

For the foregoing, see RSNT, Annex III, paragraph 18.

If a Signatory withdraws from an Enterprise, the Party having jurisdiction over the Signatory should by entitled to replace the withdrawing Signatory. See INMARSAT Convention, Article 29.

Article 3

Purposes

1. The Enterprises shall conduct the activities of the Authority in the Area, in the performance of their functions in implementation of Article 41.

2. In the performance of their functions and in carrying out their purposes, the Enterprises shall act in accordance with the provisions of this Part of the Convention, in particular with Articles 9 and 22, and the Annexes thereto.

3. The purposes of an Enterprise shall be the common exploration of manganese nodule deposits and the development of extraction, recovery, transportation and treatment systems for large-scale tests, as well as the subsequent economic operation of the mine. Enterprises shall also conduct feasibility studies in the field of marketing, transportaiton, logistics, and site selection.

Comment: The first two paragraphs are taken over from the RSNT; the third, indicating more specific activities, from the "Consortial agreement" proposed by the Deutsche Metallgesellschaft (Review of Activities, Edition 18 - 1975 - Manganese Nodules from the Sea).

Article 4

No impediment

The Enterprises shall be confined to the duties and objectives of manganese nodule mining, without restricting the mining production, and sale of minerals other than manganese nodules, by the Signatories.

Comment: Taken over from the "consortial agreement" proposed by the German Metallgesellschaft. This is not to preclude that problems arising from the interaction between land- and seabed-production must be taken care of in the wider framework of commodity agreements.

Article 5

Operational and financial principles

1. The Enterprises shall be financed partly by the International Seabed Authority, in accordance with the provisions of this Convention, and partly by the contributions of Signatories. Each Signatory shall have a financial interest in the Enterprise to which it belongs, in proportion to its investment share.

2. Each Signatory shall contribute to the capital requirement of the Enterprise to which it belongs and shall receive capital repayment and compensation for use of capital in accordance with Annex I.

3. The investment of Signatories shall be limited to 48 percent of the required investment capital. At least 52 percent of the investment capital must be provided by the International Seabed Authority in accordance with the provisions of this Convention.

4. Enterprises shall operate on a sound economic and financial basis having regard to accepted commercial principles.

[Article 5 (bis)

For Enterprises operating in areas under national jurisdiction, the coastal State shall provide 52 percent while the International Seabed Authority shall provide at least 24 percent and the remaining 24 percent or less may be provided by other Signatories.]

Comment: These financial and operational principles have been adapted from the INMARSAT Convention. They have been adapted in such a way, however, that the Authority must have financial control over the Enterprises. At the same time, this provision maximizes financial benefits for the Authority. On the basis of the equity joint-venture system here proposed -- with the established industry providing the technology and managerial skill and almost half of the capital investment and the Authority contributing, to start with, the value of the nodules in situ, it should not be impossible for the Authority to find the remaining needed capital in the form of grants and loans from the World Bank, regional banks and other institutions. On the proposed 52-48 basis, the revenue of the Authority will be such that it can repay loans within a very short time.

The bracketed Article 5 (bis) has been added for the case, very likely to arise, that a substantial portion of managanese nodules will, in fact, be mined in areas under national jurisdiction. If this contingency is not considered, it might, in time, leave the Authority without any business. Cooperation between the coastal State having jurisdiction over nodule sites and the Authority's Enterprises must of course be voluntary. For developing countries it certainly would be more beneficial to cooperate with the Authority's Enterprises than to deal with individual industrial States or private consortia. Developing States might, through their appropriate fora,

resolve to adopt such a policy. It would of course be preferable if enough public pressure could be built to make of this policy international good practice. In other words, the manganese nodules of the deep ocean floor should be considered common heritage of mankind, no matter on which side of the limit of national jurisdiction they happen to lie. This could be achieved through a non-binding recommendation by the Council or the Assembly.

Article 6

Structure

The Enterprises shall be governed by

-- a Governing Board

-- a Directorate headed by a Director General.

Comment: This Article needs no comment. It is in line with the RSNT as well as the INMARSAT Convention. The Consortial Agreement proposed by the Metallgesellschaft is somewhat looser.

Article 7

The Board of Governors

1. The Board of Governors of an Enterprise shall consist of 25 representatives of Signatories.

Comment: The number is purely illustrative. It seems, however, within the bounds of reason. The members of the INMARSAT Council are 22. The RSNT provides for 36 members of the Governing Board, duplicating the Authority's Council. The Statute for European Companies merely states that "the number of the members of the Board will be limited by the Statute," but does not yet contain the limit. Twenty-five seems to be a rather reasonable number.

Article 8

Board - composition

1. The Board shall be composed of

   (a) 12 representatives of those Signatories or groups of Signatories not otherwise represented, which have agreed to be represented as a group, which have the largest investment shares in the Enterprise. If a group of Signatories and a single Signatory have equal investment shares, the latter shall have the prior right. If by reason of two or more Signatories having equal investment shares the number of representatives on the Board would exceed 25, all shall, nevertheless, exceptionally, be represented.

   (b) 13 representatives not otherwise represented on the Board, elected by the Assembly of the International Seabed Authority on nomination by the Council, in order to ensure that the principle of just geographical representation is taken into account, with due regard to the interest of developing countries, of labor, and of consumers. Any Signatory elected to represent a geographical or functional group shall represent each Signatory in this group which has agreed to be so represented and which is not otherwise represented on the Board.

2. Each representative belonging to category (a) shall have a voting participation equivalent to the investment shares he represents. Each representative belonging to category (b) shall have an equal voting participation equivalent to 3 percent of the total investment.

3. Members of the Board shall serve for terms of three years or until their successors have been appointed, except that the first 25 shall be appointed for staggered terms of one, two, and three years.

4. Members of the Board shall have no direct financial interest in deep seabed resource development or related industries.

5. Members of the Board shall receive just compensation for their services.

[Article 8 (bis)

1. For Enterprises operating in areas under national jurisdiction, the Board shall be composed of

(a) 13 representatives of Signatories designated by the coastal State having jurisdiction in the area;

(b) up to and not more than 6 representatives representing the largest investment shares in the Enterprise, which shall amount to up to and not more than 24 percent of the total investment capital of the Enterprise;

(c) at least 6 Signatories elected by the Assembly of the International Seabed Authority, on nomination by the Council, in order to ensure that the principle of just geographical representation is taken into account, with due regard to the interests of developing countries, of labor, and of consumers.

2. Each representative belonging to categories (a) and (b) shall have a voting participation equivalent to the investment shares he represents. Each representative belonging to category (c) shall have an equal voting participation equivalent to 4 percent of the total investment capital of the Enterprise.]

Comment: Adapted from the INMARSAT Convention. In INMARSAT, 18 representatives are appointed on the basis of their financial investment, only 4 are "elected by the Assembly, irrespective of their investment share, in order to ensure that the principle of just geographical representation is taken into account, with due regard to the interests of developing countries"

The Seabed Authority's Enterprises are to exploit the Common Heritage of Mankind. They are to be under the effective control at all times by the Authority. Hence the number of elected representatives has been increased as has been the Authority's investment share. It is interesting, however, that the principle of combining the appointment of representatives on the basis of investment shares with the election of representatives to take care of the interests of developing countries is already established in the INMARSAT Convention.

The arrangement proposed here maximizes the active participation of developing countries in all Enterprises established by the Authority.

Paragraphs 3, 4, and 5 of Article 8 (which should be repeated in Paragraph 8 (bis) are taken from the McCloskey Draft Bill, which established "Enterprises" for deap seabed mining under Federal control. It is indeed interesting that these "Enterprises" are established very much on the same lines as those proposed here, i.e., a part of the Board of Directors is appointed by private industry, a part by the Federal Government; a part of the financing comes from private industry, a part is "Federal shares." According to Title II, Sec. 201 of that Draft Bill "only Enterprises organized in accordance with this Act may engage in deep seabed resource development." These "Enterprises" would be the obvious "Signatories" to enter into joint venture with the Seabed Authority.

We have added a somewhat vague reference to the representation of labor and of consumers on the Board. This is in line with present trends. It is not easy to specify a number, with only 13 seats at the disposal of developing countries and labor and consumers. An alternative possibility would be to establish a separate "work council" or "Labor council" the consensus of which would be needed for certain categories of decisions. This is the method adopted by the Statute for European Companies. A third alternative would be to provide for cooperation with ILO in certain areas.

Article 8 bis has been added in accordance with Article 5 bis.

Article 9

Board - procedure

1. The Board shall meet as often as may be necessary for the efficient discharge of its functions but not less than three times a year.

2. The Board shall endeavor to take decisions unamimously. If unanimous agreement cannot be reached, decisions shall be taken as follows: Decisions on substantive matters shall be taken by a majority of the representatives on the Board representing at least two-thirds of the total voting participation of all Signatories and groups of Signatories represented on the Board. Decisions on procedural matters shall be taken by a simple majority of the representatives present and voting, each

having one vote. Disputes whether a specific matter is procedural or substantive shall be decided by the Chairman of the Board. The decision of the Chairman may be overruled by a two-thirds majority of the representatives present and voting, each having one vote. The Board may adopt a different voting procedure for the election of its officers.

3. (a) Each representative shall have a voting participation equivalent to the investment share or shares he represents. However, no representative may cast on behalf of any Signatory more than 25 percent of the total voting participation of the Enterprise.

(b) (i) If a Signatory represented on the Board is entitled, based on its investment share, to a voting participation in the Enterprise, it may offer to other Signatories any or all of its investment share in excess of 25 percent.

(ii) Other Signatories may notify the Enterprise that they are prepared to accept any or all of such excess investment share. If the total of the amounts notified to the Enterprise does not exceed the amount available for distribution, the latter amount shall be distributed by the Board to the notifying Signatories in accordance with the amounts notified. If the total of the amounts notified does exceed the amount available for distribution, the latter amount shall be distributed by the Board as may be agreed among the notifying Signatories, or, failing agreement, in proportion to the amounts notified.

(iii) Any such distribution shall be made by the Board at the time of determination of investment shares pursuant to paragraph of Annex I. Any distribution shall not increase the investment share of any Signatory above 25 percent.

(c) To the extent that a Signatory decided not to offer its excess investment share to other Signatories, the corresponding voting participation of that Signatory in excess of 25 percent shall be distributed equally to all other representatives on the Board.

4. A Quorum for any meeting of the Board shall consist of a majority of the representatives on the Board, representing at least two-thirds of the total voting participation of all Signatories and groups of Signatories represented on the Board.

Comment: Adapted from the INMARSAT Convention.

Article 10

Board -functions

The Board shall have the responsibility to make provisions for carrying out the purposes of the Enterprise in the most economic, effective and efficient manner consistent with this Convention and its Annexes. To discharge this responsibility, the Board shall have the power to perform all appropriate functions, including:

(a) Adoption of one-year, two-year, and five-year programmes, which should be in concert with the research or the commercialization programme. The budget for each programme as stipulated must not be exceeded except with the approval of the Board;

(b) Adoption and implementation of management arrangements which shall require the Director General to contract for technical and operational functions whenever this is more advantageous to the Enterprise;

(c) Adoption of procurement procedures, regulations and contract terms and approval of procurement contracts consistent with this Convention and its Annexes;

(d) Adoption of financial policies, approval of the financial regulations, annual budget and annual financial statements and decisions with respect to all other financial matters, including investment shares and capital ceilings consistent with the Convention and its Annexes;

(e) Submission of the one-year, two-year, and five-year programmes to the Council of the Seabed Authority;

(f) Submission of an annual report and recommendations to the Assembly of the Seabed Authority, in accordance with Article of the Convention;

(g) Designation of an arbitrator where the Enterprise is a party to arbitration;

(h) Oversight over the activities of the Enterprise to ensure full public disclosure of all information not protected under

(i) Exercise of any other functions conferred upon it in any other Article of this Convention or its Annexes or any other function appropriate for the achievement of the purposes of the Enterprise.

Comment: The introductory paragraph and subparagraphs (b), (c), (d), (g), and (i) are adapted from the INMARSAT Convention. Subparagraph (g) will have to be brought into accord with the Articles in Part I of the Convention dealing with dispute settlement. Paragraphs (a) and (e) are new, in accordance with the requirements of the "basic conditions for exploration and exploitation" contained in Annex I of the Convention. So is paragraph (f). Paragraph (h) is taken over from the McCloskey Draft Bill (3-9-77).

Article 11

Directorate

1. The Director General shall be appointed, from among candidates proposed by the Council of the Seabed Authority, by the Board, subject to confirmation by the Assembly. The appointment is confirmed unless within sixty days more than one-third of the Members of the Assembly have informed the Depositary in writing of their objection to the appointment. The Director General may assume his functions after the appointment and pending confirmation.

2. The term of office of the Director General shall be six years. However, the Board may remove the Director General earlier on its own authority. The Board shall report the reasons for the removal to the Assembly of the Authority.

3. The Director General shall be the chief executive and legal representative of the Enterprise and shall be responsible to and under the direction of the Board.

4. The structure, staff levels and standard terms of employment of officials and employees and of consultants and other advisers to the Directorate shall be approved by the Board.

5. The Director General shall appoint the members of the Directorate. The appointment of senior officials reporting directly to the Director General shall be approved by the Board.

6. The paramount consideration in the appointment of the Director General and other personnel of the Directorate shall be the necessity of ensuring the highest standards of integrity, competency, and efficiency.

Comment: This article is standard and poses no particular problem. It is mostly adapted from the INMARSAT Convention. The appointment of the Director General is linked to the Seabed Authority which exercises some degree of control over it.

Article 12

Procurement

1. To the extent that an Enterprise does not at any time possess any goods and services required for its operations, it may procure and employ them under its direction and management. Procurement of goods and services required by an Enterprise shall be effected by the award of contracts, based on response to invitations in member countries to tender, to bidders offering the best combination of quality, price, and the most favourable delivery time.

2. If there is more than one bid offering such a combination, the contract shall be awarded in accordance with the following principles:

(a) Non-discrimination on the basis of political or similar considerations not relevant to the carrying out of operations with due diligence and efficiency;

(b) Guidelines approved by the Board with regard to the preferences to be accorded to goods and services originating in developing countries, particularly the land-locked or otherwise geographically disadvantaged among them;

3. The Governing Board may adopt rules determing the circumstances in which the requirement of invitations in member countries to bid may be dispensed with.

Comment: Adapted from Annex 2 of Part I of the Convention. In paragraph 2 (b) the Board has been substituted for the Council which,

in the RSNT, has to approve these guidelines. This is in accordance with the principle of giving the greatest possible self-determination to the Enterprises.

Paragraph (e) of the RSNT has been omitted as it deals with other matters.

The article is standard and seems to pose no particular problem. The corresponding article in the INMARSAT Convention is somewhat more detailed, and the details would be equally applicable to this Convention, but it was felt that the more summary provisions of the RSNT are adequate and more concise.

Article 13

Distribution of products

Each Signatory shall be assigned a part of the products for marketing in accordance with his share in the Enterprise.

Comments: This would take the place of the above-mentioned paragraph 7 (e) of Annex II of the RSNT. The wording is taken over from the Consortial Agreement proposed by the Metallgesellschaft AG (Review of Activities, Edition 18 - 1975 - Manganese Nodules Metals from the Sea).

Article 14

Inventions and technical information

1. An Enterprise, in connection with any work performed by it or on its behalf at its expsnes, shall acquire in inventions and technical information those rights, but no more than those rights, which are necessary and in the common interests of the Enterprise and of the Signatories in their capacity as such. In the case of work done under contract, any such rights shall be on a non-exclusive basis.

2. For the purpose of paragraph 1, an Enterprise, taking into account its principles and objectives and generally accepted industrial practices, shall, in connection with such work involving

a significant element of study, research or development, ensure for itself:

(a) the right to have disclosed to it without payment all inventions and technical information generated by such work;

(b) the right to disclose and to have disclsoed to Parties and Signatories and others within the jurisdiction of any Party such inventions and technical information and to use and to authorize and to have authorized Parties and Signatories and such others to use such inventions and technical information without payment in connection with the exploration and exploitation of the nodules on the deep seabed;

3. In case of work done under contract, ownership of the rights in inventions and technical information generated under the contract shall be retained by the contractor.

4. An Enterprise shall also ensure for itself the right, on fair and reasonable terms and conditions, to use and to have used inventions and technical information directly utilized in the execution of work performed on its behalf but not included in paragraph 2, to the extent that such use is necessary for the reconstruction or modification of any product actually delivered under a contract financed by the Enterprise, and to the extent that the person who has performed such work is entitled to grant such right.

5. The Board may in individual cases approve a deviation from the policies described in paragraphs 2 (b) and 4, where in the course of negotiation it is demonstrated to the Board that failure to deviate would be detrimental to the interests of the Enterprise.

6. The Board may also, in individual cases where exceptional circumstances warrant, approve a deviation from the policy prescribed in paragraph 3 where all the following conditions are met:

(a) it is demonstrated to the Board that failure to deviate would be detrimental to the interests of the Enterprise;

(b) the Board determines that the Enterprise should be able to ensure patent protection in any country;

(c) where, and to the extent that, the contractor is unable or unwilling to ensure such patent protection within the time required.

7. With respect to inventions and technical information in which rights are acquired by an Enterprise otherwise than pursuant to paragraph 2, the Enterprise, to the extent that it has the right to do so, shall upon request:

(a) disclose or have disclosed such inventions and technical information to any Party or Signatory subject to reimbursement of any payment made by or required of the Enterprise in respect of the exercise of the right of disclosure;

(b) make available to any Party or Signatory the right to disclose or have disclosed to others within the jurisdiction of any Party and to use and to authorize and to have authorized such others to use such inventions and technical information:

(i) without payment in connection with the exploration and exploitation of the nodules of the deep seabed;

(ii) for any other purpose, on fair and reasonable terms and conditions to be settled between Signatories or others within the jurisdiction of any Party and the Enterprise or the owner of the inventions and technical information or any other authorized entity or person having a property interest therin, and subject to reimbursement of any payment made or required of the Enterprise in respect of the exercise of these rights.

8. The disclosure and use, and the terms and conditions of disclosure and use, of all inventions and technical information in which an Enterprise has acquired any rights shall be on a non-discriminatory basis with respect to all Signatories and others within the jurisdiction of Parties.

9. Nothing in this Article shall preclude an Enterprise, if desirable, from entering into contracts with persons subject to domestic laws and regulations relating to the disclosure of technical information.

Comment: Adapted from the INMARSAT Convention. The RSNT contains very little with regard to inventions and technical information. The Consortial Agreement proposed by Metallgesellschaft AG is very much more secretive about them. The provisions of INMARSAT have been taken over in the hope that they will maximize the transfer of technology to the Authority.

Article 15

Audit

The accounts of the Enterprises shall be audited annually by an independent Auditor appointed by the Council of the International Seabed Authority. Any Party or Signatory shall have the right to inspect the accounts of the Enterprises.

Comment: Annex II of the RSNT does not contain any article on audit. The article here proposed is standard.

Article 16

Legal personality

The Enterprises shall have legal personality and shall be responsible for their acts and obligations. For the purpose of their proper functioning, they shall, in particular, have the capacity to contract, to acquire, lease, hold and dispose of movable and immovable property, to be a party to legal proceedings and to conclude agreements with States or international organizaitons.

Comment: Taken over from INMARSAT Convention. Standard article. Corresponds to paragraph 9 of Annex II of the RSNT, "Status of the Enterprise." The capacity to conclude agreements with States or international organizations" is not provided for in the RSNT. It could be retained by the Authority itself. It is proposed here to grant it to the Enterprises, again, to maximize their autonomy and self-determination. This capacity might be useful especially for Enterprises operating in areas within national jurisdiction.

Article 17

Seat of the Enterprises

The seat of the Enterprises shall be at the seat of the International Seabed Authority or at the seat of any of the regional centers or offices established by the Seabed Authority in accordance with Article 20 of this Convention.

Comment: Adapted from the RSNT. The "regional centers or offices" mentioned in Article 20 of the Convention are not mentioned in the Statute of the Enterprise (Annex II). The Statute provides, in a paragraph on "Location of offices," (d) "The principal office of the Enterprise shall be at the seat of the Authority. The Enterprise may establish other offices in the territories of any member." Article 17 as here proposed seems to make better use of Article 20 of the Convention. The use of the regional offices or centers would otherwise remain too nondescript.

Article 18

Privileges and immunities

1. Actions may be brought against an Enterprise only in a court of competent jurisdiction in the territories of a Party in which the Enterprise has an office, has appointed an agent for the purpose of accepting service or notice of process, has entered into a contract for goods or services, or has issued securities. The property and assets of the Enterprise shall, wheresoever located and by whomsoever held, be immune from all forms of seizure, attachment or execution before the delivery of final judgment against the Enterprise.

2. Property and assets of the Enterprises, wherever located and by whomsoever held, shall be immune from search, requisition, confiscation, expropriation or any other form of seizure by executive or legislative action.

3. The archives of the Enterprises shall be inviolable.

4. To the extent necessary to carry out the operations provided for in this Convention and its Annexes and subject to the pro-visions of this Annex, all property and assets of the Enterprises shall be free from restrictions, regulations, controls, and moratoria of any nature.

5. The official communications of the Enterprises shall be accorded by each Party and Signatory the same treatment that it accords to the official communications of other Parties.

6. The members of the Governing Board, alternates, officers and employees of the Enterprises:

(a) shall be immune from legal process with respect to acts performed by them in their official capacity;

(b) not being local nationals, shall be accorded the same immunities from immigration restrictions, alien registration requirements and national service obligations and the same facilities as regards exchange restrictions as are accorded by Parties to the representatives, officials, and employees of comparable rank of other Parties;

(c) shall be granted the same treatment in respect of traveling facilities as is accorded by members to representatives, officials and employees of comparable rank of other Parties.

7. (a) The Enterprises, their assets, property, income and their operations and transactions authorized by this Annex shall be immune from all taxation and from all customs duties. The Enterprises shall also be immune from liability for the collection or payment of any tax or duty.

(b) No tax shall be levied on or in respect of salaries and emoluments paid by the Enterprises to members of the Board, alternates, officials, or employees of the Enterprises who are not local citizens, subjects, or other local nationals.

(c) No taxation of any kind shall be levied on any obligation or security issued by the Enterprises (including any divident or interest thereon) by whomsoever held:

(i) which discriminates against such obligation or security solely because it

is issued by an Enterprise; or

(ii) if the sole jurisdictional basis for such taxation is the place or currency in which it is issued, made payable or paid, or the location of any office or place of business maintained by the Enterprise.

8. Each Party shall take such action as is necessary in its own territories for the purpose of making effective in terms of its own law the principles set forth in this Annex and shall inform the Enterprises of the detailed action which it has taken.

9. The Enterprises in their discretion may waive any of the privileges and immunities conferred under this article to such extent and upon such conditions as they may determine.

Comment: This article has been taken over from the RSNT. Privileges and immunities are strong in the RSNT. They are intended to contribute to making the Enterprise competitive with States and private companies operating in the area. Since this motive falls in the context of the present proposal, and economic operations, not only of the Authority but of States and private companies are directly involved, these provisions -- especially those concerning tax exemptions -- might be reconsidered. It should be noted that the INMARSAT Convention equally provides (Article 26) that "Within the scope of activities authorized by this Convention, the Organization and its property shall be exempt in all States Parties to this Convention from all national property taxation and from customs duties...." Under that Convention, too, private companies and States are directly involved.

Article 19

Liabilities

1. A Signatory shall be liable to pay damages for any action of his or his subcontractor injurious to any Enterprise arising from gross negligence or injury by malice aforethought.

2. Parties are not, in their capacity as such, liable for the acts and obligations of the Enterprises, except in relation to non-Parties or natural or juridical persons they might represent insofar as such liability may follow from Treaties in force between the Party and the non-Party concerned. However, the foregoing does not preclude a Party which has been required to pay compensation under such a Treaty to a non-Party or to a natural or juridical person it might represent from invoking any rights it may have under that Treaty against any other Party.

Comment: Paragraph 1 is adapted from the Consortial Agreement proposed by Metallgesellschaft AG. Paragraph 2 is taken over from the INMARSAT Convention. The RSNT has a paragraph, "Limitation of Liability" providing merely that "No member shall be liable, by reason of its membership, for obligations of the Enterprise." This is taken care of by Paragraph 2 as here proposed, which, however, is far more specific.

Article 20

Withdrawal

1. Anh Party or Signatory may by written notification to the Depositary withdraw from any Enterprise at any time.

2. The withdrawing Signatory shall offer assignment of his share to the other Signatories, subject to the provisions of Article 8, and the Signatories in possession of such offer shall make up their minds within a certain period of time whether they want to buy the share or not. The remaining signatories shall also have the right to buy such share in common, distributing it among themselves in accord with their own shares in the Enterprise.

3. If after expiry of the fixed period none of the Signatories has accepted the offer, the Signatory intending to assign his share shall be entitled to assign it to other interested parties. The buyer, who will need approval and designation by a Party, shall enter into all rights and obligations of the withdrawing Signatory.

Comment: Adapted from the Consortial Agreement proposed by the Metallgesellschaft AG.

Article 21

Suspension and termination

1. Persistent violations by a Signatory of any of its obligations to an Enterprise shall render such Signatory liable to suspension pursuant to Article of the Convention.

2. While under suspension a Signatory shall not be entitled to exercise any rights under this Annex except the right of withdrawal, but shall remain subject to all obligations.

Comment: Adapted from the RSNT. The corresponding provision in the INMARSAT Convention is far more elaborate. Perhaps this should be spelled out further.

Article 22

Dissolution

An Enterprise shall be terminated if all of the Signatories agree to do so. All rights and obligations of the Signatories (except for open accounts) shall then become null and void with immediate effect. In the event that after termination of the research phase only one Signatory should be left in an Enterprise, the same shall be dissolved.

Comment: Adapted from the Consortial Agreement proposed by Metallgesellschaft AG.

Article 23

Dispute settlement

[This Article will have to be harmonized with the emerging provisions of Part I and Part IV of the Convention. It affects disputes arising between Parties, or between Parties and Signatories of another Party, or between Parties or Signatories and the Enterprise, or between the Enterprises and the Seabed Authority or any organ thereof, relating to rights and obligations under this Convention and its Annexes. If not settled by negotiation or conciliation within a fixed period, such disputes will be subject either to arbitration, or to a special committee of five members appointed by agreement between the parties and selected from a list of experts on scientific, technical, economic and legal aspects of seabed mining, established by the

International Seabed Authority in accordance with Annex IIA of Part IV of the Convention. Or they will go to the appropriate Chamber of the Law of the sea Tribunal.]

Article 24

Amendments

1. Amendments to this Statute may be proposed by any Party. Proposed amendments shall be submitted to the Directorate, which shall inform the other Parties and Signatories. Three months' notice is required before consideration of an amendment by the Council of the International Seabed Authority, which shall submit its views to the Assembly within a period of six months from the date of circulation of the amendment. The Assembly shall consider the amendment not earlier than six months thereafter, taking into account any views expressed by the Council. This period may, in any particular case, be reduced by the Assembly by a substantive decision.

2. If adopted by the Assembly, the amendment shall enter into force one hundred and twenty days after the Depositary has received notices of acceptance from two-thirds of those States which at the time of adoption by the Assembly were Parties and represented at least two thirds of the total investment shares. Upon entry into force, the amendment shall become binding upon all Parties and Signatories, including those which have not accepted it.

Comment: Adapted from INMARSAT Convention.

Article 25

Depositary

1. The Depositary of this Statute shall be the Secretary-General of the International Seabed Authority.

2. The Depositary shall promptly inform all Signatory and acceding States and all Signatories of:

(a) The establishment of any new Enterprise;

(b) The adoption of any amendment to the Statute and its entry into force;

(c) Any accession of new Signatories;

(d) Any notification of withdrawal;

(e) Any suspension or termination;

(f) Other notifications and communications relating to the Statute.

3. Upon entry into force of the Statute the Depositary shall transmit a certified copy to the Secretariat of the United Nations for registration and publication in accordance with Article 102 of the Charter of the United Nations.

* * *

DALHOUSIE UNIVERSITY

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Series: Administrative records of the International Ocean Institute
Sub-Series: Publications, drafts, and reports
File: Papers written by Elisabeth Mann Borgese

Description of items:

Borgese, Elisabeth Mann. "The International Ocean Institute Story." *The Ocean Yearbook* (1993): 1-12.

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International
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THE IOI STORY

The story of the IOI goes back --by coincidence or perhaps not --as far as the story of the United Nations Convention on the Law of the Sea, that is, to the end of World War II.The routes we travelled are different, but converging.

1945 was the year President Truman made his famous Declarations on the Continental Shelf and on the U.S. Fishing Zone. His claims for extended U.S. jurisdiction, we all know, generated a wave of similar claims on the part of other States, especially in Latin America and Africa, endangering, in the minds of the great maritime powers, the freedom of navigation. Overfishing, the double threat of resource exhaustion and environmental pollution did the rest. This route passed through UNCLOS I, II, and III, and culminated in the adoption of the United Nations Convention on the Law of the Sea in 1992.

1945 also was the year of the first atomic bombs, which "ushered in the atomic age," as the phrase of that time had it.

1945 was also the year of San Francisco and the signing of the U.N.Charter, that was to assure a world freed from the scourge of war, a world of peace, justice and economic development.

Professors at the University of Chicago, under the leadership of University president Robert M. Hutchins, doubted that the United Nations, such as it was structured by the victorious World War II allies, already breeding the virus of the "cold war," could do the job.

Those Professors can be divided into two interacting groups. One group

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consisted of atomic scientists -- most of them, exiles from fascist European States: Enrico Fermi, Eugene Szilard, Edward Teller, Jerome Frank. It was they who were largely responsible for unleashing the demon, through the "Manhattan Project" and the Stagfield Labs of the University of Chicago. They felt the pangs of conscience. The demon had to be returned to the bottle. Atomic weapons had to be prohibited and destroyed. They inspired, and embraced, the so-called "Lilienthal-Baruch Plan" put forward by Dean Acheson at the Geneva Disarmament Conference of the United Nations.

The plan, debated heatedly in the journals of 1946 -- especially the **Bulletin of Atomic Scientists**, published by the University of Chicago, made a number of very interesting points: interesting, also, for the subsequent development of the Law of the Sea. the Plan was to establish an Atomic Development Authority through which States would **own and manage all existing nuclear resources**. Nuclear resources could **not** be owned by any State, individual or institution. Nuclear resources constituted in fact -- first in the Lilienthal-Baruch Plan, later in EURATOM -- an early version of the Common Heritage of Mankind.

The second interesting concept was that the Authority was to be in control --was, in fact, to **manage** --both disarmament and development: that is, it was to inspect all facilities and prevent the misuse of nuclear resources for weapons production, and, at the same time, it was to enhance and manage nuclear development for peaceful, industrial and medical purposes. The authors of the Plan were convinced that it was impossible to prevent a nuclear arms race, **unless** the Authority controlled and managed, directly or by

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delegation, the peaceful uses of nuclear resources.

This was the first time that a linkage was established between disarmament and development, and it was of a different kind than any contemplated later on. It was in fact embodied in one single institution, albeit in one that was not well defined. This takes me to the weaknesses of the plan.

These weaknesses were three: One was structural, the other two, political: Who, concretely, was going to have this formidable power of control over disarmament and development? A dictatorial technocracy? No one anticipated the long years of labour that would be needed --as shown by UNCLOS III --to assure an acceptable and balanced system of participation and decision-=making on such issues of global concern.

The political weakness, above all, was that the Plan should have been enforced under the threat of the U.S. Atomic bomb, the U.S. being the sole atomic power at the time and trying to see to it that no other country ever would. This, as it turned out, was unacceptable to the world community.

Last not least, the Atomic Scientists were so totally preoccupied with atomic fear that they tended to forget that there were other issues.they thought that peace could be safeguarded if only atomic weapons could be controlled. The other Chicago group did not think so.

This second group of University of Chicago Professors were social scientists: Political scientists, anthropologists, philosophers, lawyers: G.A. Borgese, Robert Redfield, Richard McKeon, Mortimer Adler, joined by some scholars from other universities --Albert Guérard, Erich Kahler, and some others.

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Their slogan was that the University that had been largely responsible for the splitting of the atom now had the responsibility of putting the world together again. They formed the Committee to Frame a World Constitution, under Robert Hutchins and G.A. Borgese, to develop an ideal blue print that would correct the weaknesses of the United Nations and would indeed be capable of preventing not only nuclear war, but international war in general, and assure peace through justice. The blue print, **Preliminary Draft of as World Constitution**, was published by the University of Chicago Press in 1948. It was translated into 18 languages, including Russian, Chinese, Arabic, and Hindi, and reached a circulation of over a million copies. The Committee also published a journal, **Common Cause**, at the University of Chicago.

The "World Constitution" contained some basic principles which were utopian and academic at the time (1948): but their time was to come.

Peace in the world, *Pacem in terris*, the authors argued, was not possible without justice, *Pax opus justitiae*, was our motto, and justice, in the years following World War II, meant decolonialization and a new international economic order. We did not use that name at that time, but that is what we meant. The arms race was a symptom, not a cause, the cause was inequality; and thus disarmament had to be linked to development or it could not happen at all.

But then, there was this further consideration --utopian; academic: it was impossible to get international social justice on the basis of the existing concepts of property: the Roman Law concept of property, including the right to use and to misuse property.Borrowing, not from red-necked socialism but

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from none else but the Archbishop of Canterbury and his Dean the Reverend Hewlett Johnson, the Constitution established that, not only the oceans, but water, as well as land --the earth and its resources --,air, atmosphere, space, and energy were to be the common property of all mankind, to be managed, for the benefit of all, by the World Government institutions. It may have been totally utopian at the time: an academic exercise: Yet, 20 years later, at least the seabed and its resources, as well as the moon and outer space were declared to be the common heritage of mankind, to be managed, for the good of all, by an international Authority, to be established for this purpose.

There was yet another interesting aspect to that World Constitution. Nation States would be with us for some time, the authors argued, but they were not the proper basis for decision-making with regard to global concerns. The Executive **Council** of the World Government was to be based on **regional, not on national, representation**, even though the regions --we identified nine -- did not really exist as political entities. But, within a General Assembly of States, one could establish "regional colleges" each of which would have to nominate a certain number of candidates from that region, on the basis of personal merit and excellence. The Assembly, then, would elect an equal number of Council Members for each of the nine regions, which would result in a manageable and balanced decision-masking body.

The United Nations system, and in particular, the Law of the Sea negotiations have gone a long way in this direction.

Then came McCartyism, and the Korean War, and what had been utopian, a noble dream, began to look rather absurd. The older members of

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the Committee to frame as World Constitution aged and died --including the founder, G.A.Borgese.

20 years later President Hutchins, who had left the University of Chicago and founded the Center for the Study of Democratic Institutions in Santa Barbara, California, called me back, made me a fellow of the Centre, and asked me to take up where we had left off 20 years ago. What did the World Constitution mean today: Were we any closer to its realization?

I organized a series of seminars on this question, focusing on the human rights aspects, the economic aspects, the disarmament aspects, bringing some very distinguished and interesting new thinkers into the process: Alva and Gunnar Myrdal; Wolfgang Friedman, Jovan Djordjevic, Silviu Brucan.the upshot, of course, was: we needed a new international order more than ever, but, alas, we were not a whit closer to it than we had been 20 years earlier.

Just then a letter arrived, from an unknown gentlemen in Connecticut, whose name escapes me: a reader of the Centre's literature. World Government, he suggested, was not in the cards, but it was in the Law of the Sea that things were on the move, and we needed a new Conference, and a new Convention, on the Law of the Sea: a Constitution for the Oceans.

That did it. I suggested to Mr. Hutchins that here we could connect our lofty ideas and ideals with the realm of real politics.the oceans should become our laboratory for the making of a new world order.

Hutchins was interested. The idea was discussed with Ritchie Calder, Wolfgang Friedmann and the others, and then, on November 1, 1967, Arvid Pardo made his epoch-making speech at the United Nations and laid it all out

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for us.

Hutchins and the other fellows at the Center were engaged in a series of Conferences, exploring the implications of the Papal Encyclical **Pacem in Terris**. I suggested we should start a project to draft a Constitution for the Oceans and bring it to public attention in a conference in Malta, the home of Arvid Pardo, and call it **Pacem in Maribus.** I immediately contacted Arvid Pardo, invited him to the Center, and we elaborated a three-year project, including five preparatory workshops, to culminate, eventually, in the big conference in Malta. The six workshops were to deal with the following aspects:the marine environment and the marine sciences; planning and development in the oceans; the marine enterprises; Disarmament in the marine sector; and the legal and institutional structure of the ocean regime. The workshops, to which , in the tradition of the Santa Barbara Center, the best national and international experts were invited --Ritchie Calder, Sidney Holt, Alexander King, Jacques Piccard, to name but a few, took place in Santa Barbara, at UNITAR in New York, on invitation of Oscar Schachter, another pioneer of the new Law of the Sea, and in Rhode Island, were we were the guests of Senator Claiborne Pell, who had just published his own model Law of the Sea Convention. I remember playing a game of chess with Arvid Pardo in Claiborne Pell's house, which I glamorously lost: a lesson which I did not even need, to convince me of Arvid Pardo's supreme intelligence and genius. I felt privileged, then and there, to become his student and collaborator.

We produced 5 well-nourished volumes with our seminars, on all aspects of ocean governance; it also became quite clear to us that --as the

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Convention later was to put it, "the problems of ocean space are closely interrelated and need to be considered as a whole." That was a concept very close to that of the "problematique" of the Club of Rome, which I was invited to join at that time.

Drawing on the Chicago World Constitution as well as on the discussions and the work of my colleagues, I myself wrote the paper on the institutional framework. It was published in November, 1968, under the title **The Ocean Regime**. Among the fundamental principles that were to govern this ocean regime was one, No. 17, that stated:

> *The International Regime for the Peaceful Uses of Ocean Space shall provide a pattern for the future framework of international organization.*

Pacem in Maribus, June 1970, was, by all standards, a great success. There were 260 participants from 51 countries, and they included the makers and shakers among ocean scientists and environmentalists, industrialists, diplomats and international lawyers. Shirley Amerasinghe --later, President UNCLOS III -- was there; Paul Engo, Galindo Pohl, Alexander Yankov, Johan Galtung, Salim Salim of Tanzania,, Raul Prebisch, Gaetano Aranjo Ruiz (now a Judge in the International Court of Justice in the Hague),Alan Beesley, Jens Evenson, René Dupuy, Jean-Pierre Levy of the United Nations, Aurelio Peccei, Roger Revelle to name only a few who, later on became leaders at UNCLOS III; Nobel Laureate Alva Myrdal made a splendid statement on the arms race and the need for disarmament in the oceans; Clare Booth Luce added glamour and publicity. There also was a group of specially invited

young people, many of whom were to become leaders in ocean development and the law of the sea later on: Ann Hollick of the United States; Wolfgang Graf Vitzthum and Uwe Jenisch of the Federal Republic of Germany; P.S. Rao of India (now Legal Advisor to the Ministry of Foreign Affairs; The conference president was Justice William Douglas of the Supreme Court of the United States, assisted by Harry Ashmore, the Centre's Vice President.

When all was said and done, there was a general feeling that this was a beginning, not an end, that the discussions must be continued and that there was a lot of work to be done: work that would have to be so innovative that it was better done at the nongovernmental than at the intergovernmental level, which had its narrow constraints. A "Continuing Committee" formed spontaneously, but without the organizational support of the Santa Barbara Center which felt it had done its job as a catalyst. Mr. Ashmore wished us well and assumed that I would undoubtedly continue to apply my mind to the advancement of the ocean regime and the law of the sea.

So there we were: a group of people of good will, but without an organization, and without a penny.

What to do next?

One member of the group, Peter Dohrn, of the great Dohrn family which, in the 1870s, founded the famous Aquarium and Zoological Station in Naples, gave me a check for two thousand dollars. I had never seen a check for two thousand dollars and thought, now we were really rich and could do a lot of things.

Another member of the group, Silviu Brucan, who was to become a

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protagonist in the struggle against Ceaucescu's terrible dictatorship in Rumania, had a brilliant idea: We should initiate a project that was much needed but that would also attract a lot of public attention and might bring us some funding. He suggested --in 1970! --we should start a project on the pollution of the Mediterranean and come up with a plan on what to do about it.

We did. We met at the Dohrn Station in Ischia, near Naples; we commissioned Lord Richie Calder to write the study which was to be launched the following year, in Malta, at Pacem in Maribus II.the University of Malta gave us its full support. Sidney Holt, and his young friend, Caroline Vanderbilt, gave us most of their time, and thus the work continued. When Ritchie's book was out, we obtained a grant of $30,000 from the Ford Foundation to expand the study and conduct a an international workshop on Environment and Development in the Mediterranean. This took place in 1972, in Split, Yugoslavia. This was an effort which eventually led to the Barcelona Convention and the Mediterranean Action Plan. UNEP has always been generous enough to give the IOI credit for this beginning.

We also obtained the support of the United Nations Development Programme (UNDP) and with this support we were able to formally establish the International Ocean Institute as an international nongovernmental organization at the University of Malta. Sidney Holt was its first director. The "Continuing Committee was transformed into a permanent Planning Council, to which a Board of Trustees was added. I was made Chairman of the Planning Council, Shirley Amerasinghe became President of the Board of

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Trustees, which he remained, until his untimely death in 1981. He was succeeded by Ambassador Layachi Yaker of Algeria. Paul Hoffman, then the Administrator of UNDP, was made Honorary President.

The friends and colleagues who joined us in Malta in 1970 and 1971 and formed the "continuing committee" are still with us: an extraordinary group of people from East, West, North and South. Except that time has taken its toll: Shirley Amerasinghe, Paul Hoffman, Aurelio Peccei, Ritchie Calder, King Gordon, Roger Revelle, left us, but left indelible imprints on our work.

Project now followed project. A Caribbean projects was undertaken in the wake of the Mediterranean one. Subjects requiring research were overabundant. Our means to carry out research were very limited. Most of it was done on a voluntary base, free of charge. We followed up on the subjects already broached in the volumes preceding Pacem in Maribus I: a study on an ocean development tax was carried out by a team of young economists at Cambridge University, headed by a researcher, Glyn Ford, who today is the leader of the social democratic parties in the European Parliament, where he just has introduced a strongly worded Resolution urging States to ratify the U.N. Convention on the Law of the Sea. Another study, on the economic potential of the oceans, was commissioned from the well-known futurologist and economist, Bertrand de Jouvenel. Disarmament in the oceans remained a continuous commitment, and an in-depth study was carried out under the leadership of General Indar Rykhie, the founder and director of the International Peace Academy. The IOI was the first to examine in detail the

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linkages between the Law of the Sea and the New International Economic order. This great subject was first broached in the summer of 1975, in a seminar organized by the IOI for the Delegates to the Law of the Sea Conference in Geneva. The linkages came as a surprise even to some of the chief architects of the NIEO. The work was to form the substance of the chapter on the oceans in the RIO Report (Reshaping the International Order), written, under the guidance of Nobel Laureate Jan Tinbergen for the Club of Rome. Arvid Pardo and I were responsible for the Ocean chapter, which subsequently was expanded into a full-length study, thanks to a grant from the Netherlands Government.

These, and other, projects constituted the basis for our Pacem in Maribus Conferences which followed one another, year after year, in Malta, then in other countries: Japan, Cameroon, Mexico, Algeria (where our study on the Law of the Sea and the New International Order was presented in 1976)), Austria, Sweden, the Soviet Union, Canada, the Netherlands, Portugal.

Undoubtedly, these projects and conferences were useful. They offered a forum where the problems of ocean space could be considered as a whole.They did feed new approaches, new ideas, into the international system. But the heyday of the "think tanks" was over. You could not live of ideas alone. Practical results had to be demonstrated, if you wanted to raise enough funds to survive as an institution.

IOI's next break-through came with the training programme.

Ever since the mid-seventies it was clear to any one who followed the Law of the Sea negotiations that the new Convention was going to make

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extraordinarily high demands on the professionals and civil servants of the developing countries.the "job descriptions" for the individuals to be elected or appointed to the various organs of the International Sea-bed Authority" were rather daunting. Even in the industrialised world, it would not be easy to find enough qualified persons. The developing countries were seriously disadvantaged. They would need assistance to train a sufficient number of people to fill their quotas. It became equally obvious that they needed new skills to fully benefit from their newly acquired Exclusive Economic Zones.

IOI was perhaps the very first to raise the issue of training programmes. The inspiration came from Juan Somavia of Chile (now Chile's Permanent Representative to the U.N.), on a rainy day, on a walk, in Rome, between luncheon and a working session at the Society for International Development (SID). We thank him for it. And it was SIDA (Sweden) which first grasped the importance of the idea, and gave us $10,000 to convene a workshop to organize a programme to train people from developing countries for positions in the Sea-bed Authority. The workshop was convened in Malta in 1977. In the meantime Paul Engo, at the First Committee of the Law of the Sea Conference, took up the idea, and it has been under discussion ever since. There has always been a sort of duplicity on this issue. Within the Law of the Seas Conference, there was consensus that people had to be trained; outside of the Conference there was a near-consensus on the opposite point of view: Developing countries needed sea-bed mining training like a hole in the head. What they needed was training to satisfy their "basic needs," and thus it was extremely difficult for us to raise any money for the programme. CIDA,

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Canada, which had practically committed itself to support the programme, was persuaded, at the last moment, to back out. Feeling, perhaps, a little guilty about this late reversal, CIDA gave us hope for future support, if we could develop a training programme on EEZ management.

We went ahead, in 1979/80, with a first, interdisciplinary programme on sea-bed mining, "Class A," practically without money; just to get it established; and we have followed through with it every year since. Immediately after the completion of the first programme, however, we developed a programme, "Class B," on EEZ management. This was generously funded by CIDA, Canada who, from then on, was to become our major funder. Without CIDA, the IOI would not be today what it is.

The need for training was obviously enormous.The demonstrable demand for the programmes generated support: from the Commonwealth Secretariat, from the OPEC Fund, from many others, in the developed as well as in the developing countries. Shortly, we were to add a third programme, "Class C," on regional development and cooperation, in close cooperation with the Regional Seas Programme and, later, with the Indian Ocean Marine Affairs Cooperation Programme (IOMAC). Another, annual, special programme was added in 1985, in cooperation with the World Maritime University: a one-week introduction to the United Nations Convention on the Law of the Sea.

This year, we organized 6 training programmes, for a total of about 100 participants, for a value of about a million dollars. Having completed almost 40 programmes now, the IOI has established itself as a leader in this field.

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The programmes reflect the policy and the "philosophy" of the institute. They are broadly interdisciplinary. They are "foundation courses," that should raise the awareness of the importance of the oceans in the world economy, in the world ecology, and in the structure of international relations. We are as convinced today as we were 25 years ago, that ocean affairs are at the vanguard of international development: that here we are forced, by the very nature of the medium, the oceans, in which we are working. to do things differently, to truly integrate environment and development concerns, to do things jointly or we cannot do them at all. Here we are trying to contribute to the formation of a new type of civil servant who understands the implications of the statement that "the problems of ocean space are closely related and must be considered as a whole; who is at home both in the natural and in the social sciences, who can integrate short-term and long term, local, national, regional and global concerns.

Those same years of expansion, 1979/80 to a new level of activities gave rise to yet another development: the publication of the **Ocean Yearbook**. The inspiration came from Francis Auburn of Australia --still today a member of our Board of Editors, and we are grateful to him for the idea.. The purpose of **Ocean Yearbook** is the same: a publication that should transcend sectoral boundaries and present data, statistics, developments on all major marine activities: fishing, offshore hydrocarbons, ocean mining; shipping; ports and harbours; coastal management, regional development; environment; science; technology; law and politics. With the generous support of the University of

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Chicago Press and the East West Centre and the voluntary work of so many friends and colleagues, starting with Norton Ginsburg, we have made it to Volume 10 --to go on from there.

This period of the eighties, undoubtedly, was highly productive, as we established contacts in all parts of the world; obtained consultative status with all the "competent organizations" of the United Nations system and developed the four branches of our activities: research, training, conferences, and publication: all interlinked; one feeding into the other, and our budget increased to about a million and as half a year. But it was also as period of great risk taking; of living from hand to mouth, of not knowing where the money for the next training programme would come from; it was sometimes rather nerve-wracking, for the decision-makers as well as --or even more so -- for the tiny, overworked, and insecure staff. We would joke about it. "This is training programme No. 36," I would say --"and I am not yet in jail;" and I would ask a staff member to go to the Bank (to which we owed a lot of money...) and "try to look normal!" There may have been some "brinkmanship" as we insisted to move forward, never to back down, causing hardship, for which I apologize.

Omitting, for obvious reasons of space, many details of the development of the IOI, I want to move straight to the next major breakthrough, and that is a grant of US$2.6 million from the Global Environment Facility, administered jointly by the World Bank, UNDP, and UNEP. This now enables us to consolidate our far-flung operations, to develop the IOI into a "system," rather than just an "institute." This, we are

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convinced, is a response to the needs and challenges of our time: A well coordinated system held together by a common philosophy, a common aspiration, a common approach to a new world order. There will be four "operational centres" now -- besides those already established in Malta and Halifax -- in Colombia, Fiji, India, and Senegal, Africa, Asia, Latin America and Oceania, covering, besides the Mediterranean and the North Atlantic, now the Caribbean, the Indian Ocean, and the South Pacific -- where our training programmes will keep evolving, close to where the needs are, where region-specific research will be carried out, where relations with alumni will be intensified and expanded, where a dialogue with decision-makers in the region can be initiated and continued. These Centres will be established in close cooperation with local institutions and, needless to say, the four Directors will be local, not expatriates, assisted by regional advisory councils.

Robert Hutchins, without whom the IOI would not have been created, once said that every institution ought to be dissolved after twenty years, because within that time it must have fulfilled its mission, after which it becomes ossified and serves no further purpose.

We feel that the IOI's present re-organization comes close enough to a rebirth that should guarantee its viability and usefulness for another twenty years. Organisationally, the next step should be the establishment of an Endowment Fund of 10 million dollars, to secure independence and continuity of action for the next phase. Building on what already has been achieved, this goal can be considered as realistic.

As far as the "mission" is concerned, the new phase should be no less

challenging and intellectually exciting than the previous phase of the making of the Convention.

The United Nations Convention on the Law of the Sea is the most advanced legal instrument for the governance of global concerns ever designed by States. -- That it could go as far as it did; that, riding on the wave of aspirations and hopes of the Seventies for a New International Economic Order, it could be adopted and signed by 159 States ten years ago, is a major miracle, which could not happen today, in the present climate of reaction and disintegration. It is this present climate rather than inherent deficiencies in the Convention itself (which undoubtedly exist) that is slowing down the ratification and implementation process. Here is as mission for the IOI and its friends in Africa, Asia, Latin America and Oceania: to gather the few remaining missing ratifications to bring the Convention into force before it "goes away" -- dismembered and dismantled by the forces of reaction, and forgotten. The Convention, furthermore, is a process rather than a product, a beginning rather than an end. It needs to be interpreted, analyzed in all its economic, environmental, and institutional implications. It needs to be adapted, in practical terms, to changing political, economic, and scientific/technological circumstances and emerging new concepts.

Twelve fateful months will lapse between the 60th ratification of the Convention and its coming into force. Most of the States Parties will be developing countries, and they should take pride in this. They do have the responsibility, however, of defining a clear policy about the next phase: What to do with the International Sea-bed Authority in circumstances profoundly

different from those of the Seventies, when its structure and functions were conceived: How to redefine these functions today, within the letter and spirit of the Convention; how to grapple with the fact that "interest groups," institutionalized in the Convention as a basis for decision-making in the powerful Council, in reality are changing: some disappearing, as, e.g., the Regional Group of Eastern European Socialist States, some newly emerging, as., e.g., the group of Pioneer Investors? How, perhaps, to establish an "interim regime" that should not only be cost-effective *but productive and immediately useful to States Parties*?

If the States Parties are successful in defining such a policy and in creating an appropriate interim regime, acceptance of the Convention will greatly increase during the Fateful Twelve Months. Many industrialized countries, including, of course, the Pioneer Investors, will ratify. If they fail, the Convention will be come irrelevant, even if it is in force.

The IOI intends to participate vigorously in the dialogue that should distil the needed policy.

But then there are longer-term and even more complex questions.

If, as the Convention states, the problems of ocean space are closely interrelated and need to be considered as a whole, then we need organs, institutions *capable of considering them as a whole*, institutions beyond the presently existing sectoral and departmental framework, whether national, regional or global. If, as the Convention prescribes, there ought to be regional centres for the enhancement of marine sciences and technology in developing countries, how are these to be organized, and who is to pay for them, at a

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time when even existing international institutions are starving for lack of funds? If the concept of the Common Heritage of Mankind, as it has been defined (and the IOI has made its contribution to its definition), has a developmental (economic) as well as an environmental and a disarmament dimension, should its application be generalized from sea-bed resources to the integration of Environment and Development as a whole, as postulated by the Brundtland Report and the UNCED process based on it? If *common and comprehensive security*, without which there can be neither economic development nor conservation of the environment, has an economic, an environmental, as well as a disarmament dimension just like the concept of the Common Heritage of Mankind, would it be logical to conceive of a New International Order in which common and comprehensive security rests on an economic system based on the concept of the Common Heritage of Mankind - *Pax Opus Justitiae*? How to define the Economics of the Common Heritage?

Here is a research agenda that could keep the system busy for the next 20 years, as research agenda that needs to be articulated and integrated into the training programme, the conferences and publications.

And, in as way, we have come around full circle. Our quest for a Constitution for the Oceans was rooted in our quest for a Constitution for the World. The Law of the Sea was where the action was going to be; where dreams could become policies and politics; where grand ideas could be tied down to practical activities like fishing, shipping, mining and coastal management; the enhancement of marine science and technology. We saw the emergence of a legal constitutional structure; we are seeing the emergence --

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at least conceptually --of an institutional framework: national, regional, global, more advanced than any other existing today; more responsive to the need of integrating environment and development concerns than any other; more responsive, also, than any other, to the needs and aspirations of developing countries. Are there lessons to be learned from ocean governance for the governance of other global concerns? If so, how, and in how far, are we to apply the concept of the Common Heritage to resources in general --to food, to energy, as well as to intellectual resources: information, knowledge which are the basis of contemporary High Technology and the post-industrial economy based on it?

This is the theme of Pacem in Maribus XX: not an end, but a new beginning of work that will never end.

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Managerial Implications of Sustainable Development in the Ocean[1]

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INTRODUCTION

There is broad consenus on the bad state of the hydrosphere. There is also agreement on the direction in which the relation between human activities and nature must be transformed—it must be made sustainable. To make this possible, extensive interventions are required to transform the processes. While the magnitude of the undertaking even in a national context is large, the matter takes on much larger dimensions when one deals with environmental problems going beyond national borders. In the context of international relations as they are today, no government can perform interventions on its own so as to lead to a sustainable future. Shaping sustainable development depends on the continued actions of national authorities, private business, and international organizations.

Thus management must tackle simultaneously the national, regional, and international spheres. In the regional and international spheres especially this leads to tensions in the development of an appropriate environmental/economic policy. In an international community, caring for the environment would be relatively simple if leadership were vertically and hierarchically structured. The top could then simply issue directives for a sustainable development. In actuality the international community is structured horizontally. The many actors responsible for sustainable development all have particular means of power and almost always diverging views on environmental/economic problems. Moreover, sustainable development is a process that by its very nature takes a long time. Over time, positions of power and ideas can shift, which leads to further complications.

1. This paper first appeared as "Managerial Implications of Sustainable Development in the Oceans," in Elisabeth Mann Borgese, *Ocean Governance and the United Nations* (Halifax: Centre for Foreign Policy Studies, Dalhousie University, 1995), chap. 5, pp. 103–126.

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SUSTAINABLE DEVELOPMENT

Sustainable development can be thought of as a new paradigm, a mode of thinking that serves as a guide to action. In this concept the achievement of sustainable development entails decision making in a continuum where questions are constantly being asked and "right" choices made in the context of the perceived situation. Thus sustainable development becomes a process where there is no "end state" but constant decision making for establishing harmony between environment and development. This decision making places the concept of sustainable development in a state of perpetual movement as it lurches from one equilibrium, through disequilibrium, to another equilibrium.

The basic meaning of sustainable development in a decision-making context can be gleaned from *Our Common Future,* the report of the World Commission on Environment and Development.[2] According to *Our Common Future* the general goals of sustainable development are

- meet the needs of the present without compromising the ability of future generations to meet their own needs;
- initiate a process of change in which the exploitation of resources, direction of investments, orientation of technological development, and institutional change are made consistent with future as well as present needs; and
- enable societies to meet human needs both by increasing productive potential and by insuring equitable potential and opportunities for all.[3]

The ideas underlying the above definitions include the twin concepts of "needs," especially of the poorer parts of the world, and of "limitations" on the ability of the natural environment to meet present and future needs. In a decision-making system the parameters involved would be to be guided by a set of principles (e.g., Rio Declaration of Principles, Common Heritage of Mankind, etc.); to be integrated in nature; and to have the capacity to craft sustainable development through sufficient technological know-how, and natural and human resources.[4]

Integrated Management

Any management system has to follow the steps of establishing a policy, planning procedures, and programs. If the system is to be integrated, there have to be integrative mechanisms.

2. World Commission on Environment and Development, *Our Common Future* (Oxford: Oxford University Press, 1987).

3. Ibid., pp. 8, 46, 44.

4. Biliana Cicin-Sain, "Sustainable Development and Integrated Coastal Management," *Ocean and Coastal Management* 21, nos. 1–3 (1993): 11–44.

Couper points out that, "unlike land use management, ocean management is complicated by the fluidity of the medium, its three-dimensional parameters, mobility of many resources and activities, the complexity of interactive ecosystems, and the lack of relevance of administrative boundaries to the natural environment."[5] He goes on to say that "ocean management is to be considered as a methodology through which several activities (navigation, fishing, mining, etc.) and environmental quality in a sea area are considered as a whole, and their uses optimised in order to maximise net benefits to a nation, but without prejudicing local socio-economic interests or jeopardizing benefits to future generations" (p. 2).

Miles has given a more operational and process-based definition of management.[6] According to him, "policy" refers to a purposive course of action in response to a set of perceived problems; "implementation" is the transforming of policy decisions into action; and "management" is the control exercised over people, programs, and resources. An integrated policy is thus a sine qua non for integrated management.

An excellent discussion on integrated marine policy is offered by Arild Underdahl.[7] According to Underdahl, to be perfectly integrated a policy has to meet the triple requirements of comprehensiveness, aggregation, and consistency. The more comprehensive a policy, however, the more difficult it is to aggregate it for purposes of evaluation or formulation, while consistency is something rarely achieved in the uncertain and ever-changing marine environment. Underdahl stresses that the ideal model of an integrated policy will rarely, if ever, be a sensible goal. When the costs of integration are taken into account, some imperfection in policy is not only necessary but desirable.

Peet, while noting that Couper's description is not a definition of integrated ocean management, questions whether integrated ocean management is possible in practice since ocean systems are much too complex to be managed by a single system of management.[8] Using the concepts of comprehensiveness of scope, coherence of elements, consistency over time, and cost effectiveness of results as the key characteristics of ocean management, he goes on to say that countries can move only toward a system where the principles underlying the concept of integrated ocean management could to some extent be utilized in the framing of policies.

Cicin-Sain, while strongly agreeing with the Agenda 21 emphasis on integration,[9] has the following caveats on policy integration: not every interaction

5. Alistair D. Couper, "History of Ocean Management," in *Ocean Management in Global Change*, ed. Paolo Fabbri (London: Elsevier Applied Science, 1992), pp. 1–18.

6. E. L. Miles, "Concepts, Approaches, and Applications in Sea Use Planning and Management," *Ocean Development and International Law* 20, no. 3 (1989): 213–38.

7. Arild Underdahl, "Integrated Marine Policy," *Marine Policy*, July 1980, pp. 159–69.

8. Gerard Peet, "Ocean Management in Practice," in *Ocean Management in Global Change*, ed. Paolo Fabbri (London: Elsevier Applied Science, 1992), pp. 39–56.

9. Agenda 21: An agenda for the 21st Century, adopted by the United Nations Conference on Environment and Development at Rio de Janeiro, 1992.

between different sectors is problematic and therefore in need of management; integrated management does not generally replace sectoral management, but instead supplements it; policy integration is often best performed at a higher bureaucratic level than sectoral management; and the costs of policy integration should be kept in mind, since sometimes the costs may outweigh the benefits.[10]

She also views policy integration as a continuum, as in table 1.

Policy Networks

In the oceanic/coastal context, integration must be achieved between nations in the international and ecosystem contexts; among levels of government (national, subnational, local); among economic sectors (tourism, oil and gas, fisheries, mining, etc.); between land and oceanic sides of the coastal zone; and between disciplines (natural sciences, social sciences, engineering).

As already noted in both the inter- and intranational contexts, the organizational system is structured horizontally and not vertically. The traditional regulatory instruments of governance are thus of very limited effectiveness in this structure. There has been increasing attention therefore to the management of policy networks, especially insofar as environmental problems are concerned. In an analysis of the existing situation, Bruijn and Heuvelhof point out "that the instruments which eminently belong to a vertically structured context, i.e., regulatory instruments, are losing their relative importance in favour of instruments which are better suited for a horizontal context, such as market-conforming instruments and especially communicative instruments," and "that actions and instruments often turn out to be realized in consultation and negotiations with the actors to whom they apply and with those who are expected to implement and maintain them."[11] They go on to say that instruments constructed and used without a significant degree of agreement among the concerned parties often prove ineffectual. The reason for the instruments' inadequacy is that they do not fit the context in which they are to operate. Though such instruments could possibly fit into a vertical, hierarchical context, they cannot apply to a context of governance devoid of hierarchy, as we find in the marine affairs field, with many nongovernmental organizations, private businesses, transnationals, and so forth, in the field. Since in this system there is no question of superiority or inferiority, the concerned actors are more or less equal to each other, and no actor can constantly have its own way against the wishes of other actors, the system forms a policy network or, more simply, a network. Bruijn and Heuvelhof

10. Cicin-Sain (n. 4 above), pp. 19–20.

11. Hans de Bruijn and Ernst den Heuvelhof, "Management of Environmental Policy Networks," paper presented at "The Transformation to a Sustainable Future," CLTM, Kerkebesch, Zeist, 1994.

TABLE 1.—CONTINUUM OF POLICY INTEGRATION

Less Integrated ← Fragmented Approach	Communication	Coordination	Harmonization	→ More Integrated Integration
Little communication among independent units.	Forum for periodic communication or meeting among independent units.	Some synchronization of work by independent units.	Synchronization of work by independent units, guided by explicit policy goals and directions.	Formal mechanisms to synchronize work by independent units, which lose at least part of their independence when responding to explicit policy goals and directions (often involves institutional reorganization).

SOURCE.—Based on Biliana Cicin-Sain, "Sustainable Development and Integrated Coastal Management," *Ocean and Coastal Management* 21, nos. 1–3 (1993): 11–44.

distinguish four characteristics of such a network, that is, pluriformity, reticence, interdependence, and dynamic nature.[12]

Pluriformity means that actors within a network differ from each other and, on the level below, individual actors are structured in a variety of ways, for example, the immensely pluriform nature of the business world, which allows companies never to have the same sensitiveness to the same governance signal.

Furthermore, actors in networks often have some kind of autonomy, and as a result, they are relatively reticent with regard to their environment. They can also shut themselves off from the governance signals coming from government agencies and other sources. It appears from quite a few studies, for example, that subsidies often have very little influence on the behavior of companies. Companies are primarily guided by internal cost-benefit considerations and not by external subsidies.

A third characteristic of networks is that the actors that belong to the network are interdependent. These interdependencies can be expressed in different ways (finance, authority, political support, etc.). Also, in the environmental policy field there are many complex interdependencies. Companies that cause pollution depend on the government for their license, but at the same time government depends on these companies for the taxes they pay and for the employment they create.

A fourth feature is that networks have a dynamic nature. The nature and extent of pluriformity, the extent of reticence, and the interdependencies change constantly. Dynamics hampers governance. A company that today is somewhat sensitive to a subsidy may shut itself off from the effect of subsidies in the future. Sustainable development is a process, so dynamics will always manifest itself.

A networklike context makes it clear that environmental policy will always involve more than the use of policy instruments. When relating the complexity of environmental problems to the complexity of the policy network around them, we must use strategic forms of governance. The essence of strategic governance is changing the context of the governing process in such a way that governance on the instrumental level is easier. To put it differently, the structure of a network (pluriformity, reticence, interdependency, and dynamics) must be changed so that instruments are used more successfully. This form of strategic governance is called network management.

Network management is an embyronic discipline. Bruijn and Heuvelhof have surveyed the literature, however, and suggest possible methods of governance.

- Changing the nature of interdependencies among the actors in the network. For example, changing plural interdependencies into simple interdependencies makes it possible for actors to engage in simple processes of exchange.

12. Ibid., pp. 89–91.

- Making actors take part in more than one network. This leads to possibilities of trade-offs and "unfreezing" of one network because of what takes place in another newwork.
- Having decentralized systems, whereby a focal organization can be established, or a lead actor identified, in a target group. All signals can then be focused on the lead organization or actor.
- Managing a network that is very sensitive to information and requires a constant process of information gathering and interpretation. In such a situation, the building of redundancies (or multiple information channels) and "linkages" between the actors involved can lead to better governance possibilities.
- Alternating cooperation and conflict scenarios to develop package deals, thereby neutralizing the obstructive power that flows from a purely competitive scenario.
- Discovering new possibilities of governance. Owing to the dynamics of networks, network management can only partly be a rational process, and network management has to be at least partly a goal-searching activity. So network management has to consist of both "intended strategies" and "emergent strategies." Since emergent strategies only manifest themselves in an unplanned way during the process of network management, an alert management system can discover in them new possibilities of governance.

A few concluding remarks may be in order. Governments, nongovernmental actors, and other actors (businesses, social organizations) can apply forms of network management. Note, however, that network management implies a very complex activity pattern. So there are many chances for blockages and stalemates between actors. Different actors have diverging interests and can enter into dysfunctional, conflictive relations. Since these relations are horizontal, such stalemates can persist for a very long time. Consequently, sustainable development may be seriously affected.

Therefore it is of utmost importance that as many actors as possible in a network try to avoid such blockages, by entering into symbiotic relations. In areas where stalemates have arisen, the dynamics in a network (new developments, creation of new possibilities) or changing a number of interdependence relations can be used to break them.

INTEGRATION AMONG SECTORS

Sectoral management is required in the following areas:

- Fisheries and aquaculture (Parts V, VII, and IX of the United Nations Convention on the Law of the Sea (LOS Convention); Programs C and D of Chapter 17 of Agenda 21)

- Minerals and metals (Parts V and XI of the LOS Convention)
- Shipping and ports and harbors (Parts II–V, VII, and X–XII of the LOS Convention; Program A of Chapter 17, Part 5, a (i), and Part 30)
- Coastal development and coastal engineering (Part XII of the LOS Convention; Program B of Chapter 17)
- Tourism (Part XII of the LOS Convention; Program A of Chapter 17)
- Scientific research (Part XIII of the LOS Convention; Chapter 17 throughout)
- Technology (Part XIV of the LOS Convention; Chapter 17 throughout)
- Defense; warships, monitoring, and surveillance (Parts II, V, VII, and XII of the LOS Convention)
- Development of human resources (Parts XI, XII, XIII, XIV of the LOS Convention; Chapter 17 throughout)

Quite intentionally, environment is not listed as a separate category. *Each one of the listed areas has an integral environmental dimension.* Each area must enhance efficiency in the economic system, safeguard the integrity of the ecosystem, and promote equity, both intragenerational and intergenerational. This is the very essence of the new paradigm.

All but the first two of these sea uses belong to the modern service sector. The first two, which belong to what used to be called the "productive" or "secondary" sector, comprise important service elements (research and development, training, environmental impact assessment, maintenance, recycling, and waste disposal). Every area depends today on high technology, including information technology and data handling; each is interdisciplinary and is required to deal with uncertainty, cope with rapid change, deal with national/international legislation, and straddle different legal regimes.

But though there are some areas of common concern, there are many others that are divergent. Their scientific bases and disciplines, for example, vary—biology for fisheries; geology for minerals; naval architecture and engineering for shipping, ports, and harbors; geography and urbanization for coastal development; and so on. Each discipline over the years has not only become highly specialized but also developed its own "culture," idiom, and language. Integration of sectoral activities depends not only on institutional measures—interagency committees and conferences, superagencies, cabinet subcommittees—but on finding a common idiom and language that can unify the various disciplines involved.

Before we discuss possible integrative mechanisms, it may be useful to examine some sectoral management systems.

Living Resources

The theory of management and conservation of living resources has undergone important changes during the seventies and eighties, moving from a

single-species to a multispecies approach embodied in the LOS Convention, from the simple models of maximum or optimum sustainable yield to the highly complex models of Prigogine and others, who attempt to include biological, chemical, physical, and meteorological as well as social, economic, and psychological factors in the model structure. Certainty has given way to uncertainty. Fisheries management, even in the most advanced countries, has not been successful. The models for "maximum sustainable yield" have recently been described as models for "mythical sustainable yield." The precautionary approach appears to be the commonsense alternative, but it is difficult to reach political agreement on when, where, and how to apply it. The goals of the fishing industry are often contradictory: high employment in the sector clearly conflicts with conservation. Politics and science are often at loggerheads.

In a recent publication Anthony T. Charles constructs an interesting model for fisheries management based on four interacting components of sustainability: ecology socioeconomics, community, and institutions.[13] Within this framework, he elaborates policy directions that include development of approaches for "living with uncertainty"; greater recognition of inherent complexities in the fisheries sector; decentralization of regulation and enhancement of local control and participation in decision making; establishment of appropriate property rights or quasi-property rights, preferably allocated at the group/community level; and comprehensive fishery planning combined with suitable economic diversification. He admits that, in spite of the abundance of theory and history, fisheries management is almost universally in trouble.

Food and Agriculture Organization (FAO) statistics make it abundantly clear that, globally, the cost of the fishing industry in subsidies is far larger than the income earned by this industry. Painful though it may be to admit it, fishing is a "sunset industry."

A very high proportion of the world's fish is caught by artisanal fishers. The artisanal catch makes the highest contribution to human nutrition as well as to employment, yet it is the artisanal fisher, the inshore fisher, who is in the deepest trouble. Erroneous policies of overinvestment in mechanization, big trawlers, and factory ships have squeezed out these fishers. Management measures, such as reserving certain areas—for example, the 12-nm area of the territorial sea—to the inshore fishers and keeping the trawlers beyond that limit, are doomed to failure, just as fisheries management within the 200-nm EEZ, is ineffective if there is no corresponding management system beyond that limit. We must give up futile attempts to carry terrestrial concepts of boundaries into the oceans. "The problems of ocean space are closely interrelated and need to be considered as a whole" (LOS Convention, Preamble).

13. Anthony T. Charles, "Toward Sustainability: The Fishing Experience," *Ecological Economics* 2, no. 3 (1994).

Apart from errors in management theory and practice, the fact remains that the march of technology cannot be stopped, as already the machine wreckers of Lancashire painfully experienced. Humans will do what humans can do. But the industrialization of hunting and gathering is a contradiction in terms. It cannot last.

During the next 10 years, fisheries management will face other dramatic changes and uncertainties. In the last analysis, it will have to manage the transition from an economy based on hunting and gathering to an economy based on cultivating marine plants and husbanding marine animals, in the sense that there will be human intervention, once or repeatedly, in the life cycle of every commercially harvested species. The importance of basic research and research and development, including genetic engineering and bio-industrial processes, recycling and industrial uses of waste products, and development of human resources, is bound to increase. Expertise in new materials may be another bonus in effective integrated management. In India, for instance, an entrepreneur fabricates a new material exclusively out of waste products. The new material is used to waterproof fish ponds, preventing seepage that might acidify neighboring agricultural soil.

To turn fishers into fish farmers is expected to cause major psychological problems. Fish hunting is a way of life, a culture, an avocation, passed from father to son. It will still be there, but it will be transformed, as everything else is. Harvesting will be a phase of culture, producing the resource that is to be fished. To assist this transition is a macrotask for management.

Nonliving Resources

The production of both fuel and nonfuel minerals as well as ocean energy (waves, tides, ocean thermal energy conversion [OTEC] depends on high-technology management, available almost exclusively in the industrialized countries. Other countries have the choice of relying on foreign companies, with faster but lower and less reliable financial returns, or developing their own capacity, which may take longer but in the end brings higher financial returns and environmental and social security. Access to information; capacity building in technology assessment and technology selection; reverse engineering; environmental impact assessment; data management; risk assessment and risk management; multiple-use planning (e.g., electricity production combined with freshwater production and aquaculture of both algae and fish, in OTEC; or electricity production combined with breakwater construction and harbor dredging, in wave energy); avoiding conflict of uses (e.g., hydrocarbon production versus fisheries or tourism); continuous human resource development; self-reliance with regard to spare parts and repairs; capacity building to enable the development of the next generation

of an acquired technology; waste recycling—all these are elements of the management of offshore minerals and hydrocarbons.

Deep-sea mining will be a high-tech industry par excellence. It involves practically every branch of high technology, from microelectronics to lasers, new materials, satellite technology, energy, even bio-industrial processes (antifouling and, possibly, processing), a fact not taken into due account by the LOS Convention, which deals with the management system in a political rather than an industrial way.

The management of shipping, ports, and harbors is extremely high-tech, particularly in the field of communication, information, and data handling. Sophisticated computer modeling of ship arrivals, berthing facilities, loading and unloading time, and so forth are utilized in port and harbor planning and management. Technological development has greatly increased the cost of constructing and managing port facilities; it has transformed the functions of ports and harbors and their environmental and social impact, and poses new challenges for management. The appendix lists the major recommendations adopted by Pacem in Maribus XVIII (Rotterdam, 1990), which was entirely devoted to the development and management of ports and harbors.

Ports and harbors, as well as tourism (now the largest industry in the world), are all part of coastal management, which is extremely complex, bridging the management of land and sea uses, national and international, of broadly interdisciplinary, often multicultural human resources, and sophisticated information technologies.

Integrated Sectors

In integrating sectoral policies, plans, and programs there are constraints in the form of strong autonomous institutions based on the principle of specialization, itself an evolute of Newtonian concepts; and the absence of an appropriate typology and adequate guidelines for adoption in different climatic, political, cultural, and socioeconomic environments.

We have already noted that there are severe constraints to the formulation of an integrated policy for the oceans. Ocean management, as pointed out by Vallejo, is still largely a theoretical concept discussed in forums like Pacem in Maribus by a few scholars who have anticipated the magnitude of the task involved in the formulation of such a program.[14] Very few governments, however, have in practice developed sea-use plans.

So far as coastal management (i.e., the landward side of the coastal zone)

14. Stella Maris A. Vallejo, "Development and Management of Coastal and Marine Areas: An International Perspective," *Ocean Yearbook 7*, ed. Elisabeth Mann Borgese, Norton Ginsburg, and Joseph R. Morgan (Chicago: University of Chicago Press, 1988), pp. 205–22.

is concerned, however, some models have been developed. Chua Thia-Eng suggests that integrated management of the coastal zone involves establishing a dynamic balance between firm, long-term policy and responsive, coordinated management.[15] The task of policy is to establish objectives to be achieved in order to realize a common purpose. The institutional and programmatic arrangements for achieving a common purpose should provide resources and flexibility to government agencies and the community, to coordinate activities, assess progress in relation to the objectives, and respond to change and opportunity.

Chua suggests that the following elements are required:

- a dynamic goal or vision of the desired condition of the oceanic or coastal area for a period significantly longer than conventional economic planning horizons, say 25 or 50 years;
- the formulation of national objectives to which policies and management are directed;
- guiding principles for exercising discretionary powers for planning, granting approvals, or making changes to the purpose or extent of use and access;
- a strategy, commitment, and resources for the detailed day-to-day management involving several agencies and the community;
- clear, legally based identification of authority, precedence, and accountability; and
- performance indicators and monitoring to enable objective assessment of the extent to which goals and objectives have been achieved.

Matrices of use interaction can be constructed, showing negative and positive mutual impacts between uses. Zoning may reduce negative interactions.

Implementing the recommendations of Chapter 17 may include three categories of zones for the purpose of promoting sustainable land and sea use: conservation areas, biodiversity-rich areas that should be preserved in their pristine condition; ecoredevelopment areas such as the degraded mangrove ecosystems, coral reefs, and other damaged ecosystems, which should be placed under a restoration regime; sustainable utilization areas earmarked for coastal aquaculture, industries, and other developmental activities.[16] Such a procedure will help to develop an integrated conservation and development program for coastal areas.

15. Chua Thia-Eng, "Essential Elements of Integrated Coastal Zone Management Efforts," *Ocean and Coastal Management* 21, nos. 1–3 (1993): 81–108.

16. *Science and Technology Cooperation in the Indian Ocean Region and Restructuring the United Nations*, Proceedings of Pacem in Maribus XXIII (Madras: International Ocean Institute Operational Centre [India], 1994).

MANAGEMENT THEORY

Management theory and practice have changed no less radically than technology or the national/international order, and they are affected by the same zeitgeist. Management theory, too, has become infinitely more complex than it was once upon a time. Some of the main factors of change are listed here.

- Fast technological progress, and the economic importance of technological innovation. Over 80% of economic growth is based on technological innovation.
- Reduced resource intensiveness, greater emphasis on "miniaturization," recycling and new materials, causing structural commodity crises.
- Reduced labor intensiveness (automation, robotization), causing structural unemployment. Today, the shrinking, highly skilled workforce is part of the "elite"; the "proletariat" is constituted, not by the workers, but by the unemployed and marginalized.
- Labor relations, change from confrontation to cooperation, democratization of management system, decentralization, participation, and self-management.
- The growing importance of research and development and its high cost and high risk.The relationship between industry and academia is changing.
- The need for governmental input especially into research and development, and the changing relationship between private and public sector.
- Growing importance of the service sector (training, research and development, maintenance, repair, reconditioning, recycling, waste disposal), in each enterprise and in the economy as a whole (up to 80% of GDP in industrialized countries).
- The need for the continuous training and retraining of personnel, training for change, and training for coping with uncertainty.
- Globalization of production systems (multinational companies, consortia).
- Globalization of the banking system.
- The rise of environmental consciousness. In the past, raw materials were finite and monetarized; "externalities" (water, air) were free, unlimited and nonmonetarized; today raw materials are in surplus; "externalities" are scarce and exhaustible, but their "internalization" and monetarization is extremely complex: they are the "common heritage of mankind."
- Widening institutional gap between production, service, and financial "space" (global), and political "space" (the nation-state).

These changes have created turbulence in societal systems, making management systems tend more and more toward adaptability and flexibility so

as to be able to adjust quickly to changing conditions, whether social, economic, or technological. Boundary-spanning abilities and capabilities have become important managerial attributes, while on-line information systems require managerial attitudes different from those of an earlier, more leisurely age.

Modern organization theory has also moved from the classical theory, based on specialization of effort, and the behaviorial theory, based on attitudes like morale and motivation, to one based on a systems approach that integrates the behaviorial and classical theories and bases itself on the new and emerging information systems. This leads to flat rather than hierarchical structures. Technological developments in the marine sector place heavy demands on skilled and trained workers, who need both a theoretical framework and on-the-job experience. Human resources development is thus critical to managing the ocean sector.

An overview of the changes that have taken place in management theory over the last half century would have to include an examination of the nature of the workplace and the workers' view and expectations from his or her job; the new type of worker—skilled, educated—required by the modern industrial enterprise; the participation of women; and so forth.

If managers during the early part of the century thought that government intervention creates inefficiency, they are taught today that the world marketplace involves significant government intervention. If the bottom line was all that mattered to managers of old, and they assumed that business had no social responsibility, today they are taught that the function of business is to provide improved wealth, both public and private. If in the past the conservation of the environment was of no concern, today it certainly is. However reluctantly, the industrial enterprise has moved from defiance to lip service to the environmental cause, to cosmetic restructuring (e.g., appointment of a "vice president for the environment") and the issuance of beautiful "green" brochures, to assuming real responsibility and acceptance of the "polluter pays" principle (which may be the best to be had from the industrial enterprise today, but not good enough in the long term).

The emphasis on "sound commercial principles" in Part XI of the LOS Convention—meaning "Mind the bottom line! No social welfare and equity considerations!—appears somewhat outdated in this context and opens more questions than it answers.

Decentralization and participation, social and environmental responsibility, democratization, self-management, gender equity, cooperation with local communities and governments rather than confrontation—all this may better respond to the present stage of the industrial and technological revolution, including the information revolution, than the previous authoritarian and sectoral management style and ideology. It also responds to the postulates of the Brundtland Commission and the outcomes of the Rio Conference on Environment and Development. A political system that secures effective citi-

zen participation in decision making is a precondition for sustainable development, according to the Brundtland Report.[17] The importance of the participation of local communities, nongovernmental organizations, and indigenous people in sustainable marine resource management is stressed throughout. In the same spirit, Chapter 17 tries to "provide access, as far as possible, for concerned individuals, groups and organizations to relevant information and opportunities for consultation and participation in planning and decision-making at appropriate levels" (Sec. 17.5.[f]). And again (Sec. 17.6), management-related mechanisms "should include consultation, as appropriate, with the academic and private sectors, non-governmental organisations, local communities, resource user groups, and indigenous people." The text abounds throughout with references to participatory, vertically and horizontally integrated management systems.

INTEGRATED RESOURCES MANAGEMENT

According to Olsen, the successful practice of integrated resource management, be it for coastal or other ecosystems, is a complex and subtle endeavor sufficiently different from sectoral management.[18] In this connection, consideration of programs of integrated rural development that were launched with considerable fanfare and optimism a decade ago shows that in practice the successful implementation of an appealing concept was difficult. Besides, unlike the situation in integrated rural development, there is only a scantily documented body of experience in coastal management. The best of this experience needs to be critically examined and applied to the "integrated" coastal management programs.

After a study of such programs, Olsen suggests the following guidelines: adoption of an incremental approach to design, funding, and implementation; an experimental design; adoption of a two-track strategy at the national and community levels; building constituencies for improved resource management at all levels; a policy-relevant research agenda; capacity for effective management at all levels.

Whatever the difficulties, there can be no doubt that integrated resource management is a necessity in the coastal zone. The concept of the "coastal zone" is somewhat flexible and tends to expand, both landward, to include the hinterland up to the watershed, and seaward, to include the entire EEZ. The density of coastal populations—still on the increase—the complexity of their often conflicting activities, and their impact on coastal seas pose management problems of some magnitude. The Coastal Management

17. World Commission on Environment and Development (n. 2 above), p. 65.

18. Stephen B. Olsen, "Will Integrated Coastal Management Programmes Be Sustainable? The Constituency Problem," *Ocean and Coastal Management* 21, nos. 1–3 (1993): 201–26.

Conference in Nordwijk, the Netherlands (1994), listed the following illustrative tasks:

- identification of priorities and problems in consultation with local interests;
- identification of opportunities for the future development of coastal-related functions;
- local and/or national policy and other initiatives to address coastal problems, with clear goals that are understood and supported by the public;
- legislation and/or institutional arrangements at local, national, and, where applicable, regional levels, including means and/or authorities for coordination;
- program development, integration, and implementation over the short-, medium-, and long-term, including guiding principles, functional planning of land use and terrestrial and marine resource use, and analysis of natural and socioeconomic systems;
- assessment of environmental impacts of development and other coastal activities;
- education, public awareness, and an equitable process for the participation of stakeholders;
- systems for collection, verification, retrieval, access, and management of data and information;
- trained professional, supporting, and extension staff;
- program review and modification, including feedback mechanisms into all elements of intercoastal zone management;
- enforcement;
- research, monitoring, and assessment;
- wide application of the precautionary approach according to the capabilities of each state; and
- financial resources for multiyear planning, capital investments, and operation and maintenance expenses.

CONCLUSION

The interests of people are to be considered of utmost importance. Coastal communities feel the direct impact of activities and developments that are beyond their control. Overfishing by industrialized fleets in the deep sea within or beyond the limits of national jurisdiction is causing severe problems for artisanal inshore fishers in many parts of the world. Transboundary pollution, both from international waters on the seaward side and from international watercourses on the landward side, frustrate any effort to control pollution at the level of coastal management. Effective coastal management must

include regional cooperation as well as local, provincial, and national cooperation. Just as the waterfront is the link between the marine and the continental ecosystems, the coastal community is the link between the national and the regional systems of governance. The participation of coastal communities, fishers' cooperatives, port administrations, and indigenous people in regional international planning and decision making, stressed throughout the literature starting with the Brundtland Report, is another example of the changing concept of national sovereignty. The cooperation of coastal communities and municipalities across national boundaries as exemplified by the U.S.-Canadian cooperation in the Gulf of Maine, or the municipalities of the countries bordering the Sea of Japan, is a new phenomenon, with undoubtedly positive effects. Any design for a coastal management system—and these designs will vary, depending on local circumstances—must take these complexities and interactions into account.

The question is, How deep, and how universally, has the new ideology really penetrated? How far is it compatible with the market system? Will it really be able to cope with personal enrichment and the ruthless social and environmental exploitation generated by the past phases of the industrial revolution and the ideologies it was based on? Are not backlashes inevitable within the present economic order and institutional framework?

Management styles, the economic system, and the legal, political, and institutional order will have to evolve and change together. This is why the study of management theory should be an important part of the study of the emerging ocean regime and its potential impact on the making of a new world order for the 21st century.

APPENDIX: RECOMMENDATION OF PACEM IN MARIBUS XVIII, ROTTERDAM 1990[19]

All bodies, agencies, institutions, and organizations involved in the planning and management of ports should cooperate closely if the benefits of medium- and long-term development planning are to be maximized. Special attention must be given to establishing new relationships between port industries and users on the one hand and local authorities on the other. The current structure, management arrangements, and responsibilities of port authorities should be broadened to enable them to take more effective account of the diverse and divergent needs of users and operators.

Future port planning must recognize that the geography of sea transport will continue to undergo fundamental change. Planning should anticipate the further transnationalization of production, the growth of specialization, and the growing importance of intracompany trade. These developments will reinforce trends in the growth of higher-value productions and increasing complexity in the composition

19. *Ports as Nodal Points in a Global Transport System,* ed. Anthony J. Dolman and Jan van Ettinger (Oxford: Pergamon Press, 1992).

of cargos, placing higher demands on the speed, reliability, and safety of transport operations. Port planning will increasingly be called upon to provide tailor-made transport solutions based on multimodal operations.

Development plans for ports should be comprehensive and take account of and reconcile political, economic, social, and environmental concerns. Port development plans should cover the coastal zone in which the port has both positive and negative impacts and establish a firm basis for cooperation between the users and operators of the port and local communities.

Joint public-private systems of port management will in many cases be preferable to ports managed exclusively by public authorities. Port development should involve a creative partnership between the public and private sector and provide for public and private investment in both the port and its immediate hinterland. The main role of public authorities should be that of establishing frameworks and regulatory mechanisms, rather than those of ownership and management. Public authorities should also define their responsibilities to include the development of the mechanisms required to effectively monitor the dynamics of a rapidly changing situation.

Joint ventures between developed and developing countries in port management and development should be regarded positively, although a code of conduct could be of value establishing the required legal framework for such ventures.

Port planning must be redefined to include full consideration of all envirionmental aspects and pressures, both within the port and in its surrounding area. The technological orientation of thinking on future port development must change to a much broader environmental view that places port development within its coastal setting and that seeks to integrate the port within this setting.

Ports have become nodal points for pollution. They should increasingly become focal points for monitoring marine pollution and maritime safety. In fulfilling this role they should draw upon the services available from international organizations, such as Inmarsat. Ports should also play a more active role in providing assistance to vessels in distress.

Efforts to develop the ship of the future must concentrate not only on increasing the efficiency of the vessel and on reducing the size of crews. Much more attention must be given to the construction of ships that produce zero waste and that pose greatly reduced threats to the marine environment in the event of accidents (even if this means that crew size cannot be significantly reduced).

If the benefits of training and technical assistance (in port development and management) are to be maximized, programs should form an integral part of national strategies for human resources development.

Regional cooperation has a special role to play in training, the exchange of experience, and the cross-fertilization of ideas. More regional ventures should be established that respond to the port planning, management, and development needs of the developing countries. The UN regional commissions should be expected to take a particularly active role in such initiatives.

The impacts of the new technologies in the port and maritime industry in the developing countries will have greater significance if more opportunities are made available for these countries to actively participate in technology development research programs. First-hand exposure to new changes will contribute significantly to the promotion and acceptance of new technologies.

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Scott Allen
Law of the Sea I

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Dalhousie University

International Ocean Institute

Report from the International Ocean Institute

The IOI has entered a process of growth and transformation. This process was triggered by a grant from the Global Environment Facility which enabled us to consolidate and expand our activities through the establishment of four Operational Centres in India, Fiji, Costa Rica, and Senegal. The addition of these to the already existing Centres in Malta (Headquarters plus IOI Malta) and Canada (Dalhousie University) transformed what originally was an "Institute" into a network of institutions or Operational Centres. Each one of these is autonomous, held together by a common goal of building a new order for the seas of oceans, based on the principle of the Common Heritage of Mankind, in which developing countries and poor countries would be able to make their full contribution and reap their full benefits. Each of the Centres conducts training programmes, leadership seminars and alumni activities; each engages in region specific research; each, in turn, plays host to IOI's annual Conference, *Pacem in Maribus*.

The Operational Centres have been extremely successful in their activities, and this success has been contagious. Thus three new Centres established themselves, quite independently from the GEF framework. These are the IOI Operational Centres in Japan, China and South Africa, bringing the number of Centres up to 9. Others are in the making, at the Black-sea University in Bucharest; in Turkey, Trinidad & Tobago, Qatar, Alexandria, Ireland, and Germany.

The Directors of all the Centres now are members of the IOI Planning

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Council which establishes a curriculum development Committee and serves as a forum for the discussion of common interests, plans and projects. Two of the Chancellors/Presidents of the Centre's host institutions serve, on a rotating basis, as members of the IOI Governing Board. There is a lively exchange of information by e-mail and Internet among all Centres.

The number of IOI alumni is passing the 2000 mark. The IOI takes great pride in the fact that quite a few of them have reached leadership positions in their countries.

Pacem in Maribus XXIII was held in Costa Rica, devoted to the theme of Peace in the Oceans: the potential contribution of ocean governance and the Law of the Sea to the implementation of the United Nations Agenda for Peace. The proceedings, including a special message by the then Secretary-General Boutros Boutros-Ghali and a preface by UNESCO Director-General Federico Mayor, are being published by UNESCO.

Pacem in Maribus XXIV took place in Beijing, China. It adopted a Declaration of Beijing, which is reproduced in this issue of *Ocean Yearbook* and has been widely distributed.

Among major policy research and action-oriented projects, involving all the Centres, one should mention three::

The first is the bio-village project, started in Goa, India. The purpose is to raise the living standards of poor coastal fishing villages through the introduction of high technologies suitable to and merged with local practices based on ancient wisdom, especially in the field of information technologies and biotechnology. The project is carried out by a joint venture between the IOI, the S.M.

Swaminathan Research Foundation, the National Institute of Oceanography in Goa, and the Government of Goa. It is supported by the German Government and by a private donor in Switzerland. At a second stage, the Directors of the other Centres will be trained in the methodologies developed in India; they will then transfer methodology and technologies to their own countries and regions.

The second project is to assist UNEP in its effort to revitalise the Regional Seas Programme, which now must move from the sectoral approach of the 'Seventies to the integrated approach of the 'nineties and the next century: From "Stockholm" to "Rio" and "post-Rio."

UNEP is organising ten workshops in 1997, enlarging the framework of its Regional Sea Programmes through the inclusion of other regional intergovernmental and nongovernmental organisations. The IOI is preparing contributions to each one of these workshops, which then will be published in a volume during the Year of the Ocean.

The third project in course is research on "ocean economics" or the economics of sustainable ocean development. The aim is to transcend the narrow scope of traditional economics, reflecting a particular era -- the early phases of the industrial revolution in the eighteenth and nineteenth century -- and a particular geographic area: Western Europe and North America and its ideology. "Ocean economics," instead should reflect the reality of today and tomorrow, the post-industrial era and the ideologies, value systems and aspirations of non-European cultures, with their different concepts of "ownership," much closer to the concept of the Common Heritage of Mankind.

This work will be largely based on the work of the economist Orio Giarini

and the intercultural studies of the Executive Director of the IOI, Dr. Krishan Saigal.

In conclusion one might mention that IOI's Founder and Honourary Chair, Elisabeth Mann Borgese, will complete this year a new Report to the Club of Rome*: Ocean Perspectives,* which will serve as a basis for discussion for Pacem in Maribus XXVI, in 1998, which will take place in Canada.

Pacem in Maribus XXV, 1997 will take place in Malta. It will be devoted to the concept of the Common Heritage of Mankind.