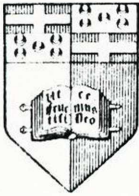


International Ocean Institute



Old University
Msida - Malta (TEL. 36450)



Pacem in Maribus

July 28, 1980.

Mr. J. de Koning
Minister for Development Cooperation
Ministry for Foreign Affairs
The Hague, Netherlands.

Dear Mr. de Koning:

Last year the Ministry for Development Cooperation was generous enough to provide us with one scholarship for our training programme in marine resource management.

The course, "Class A," focusing on seabed mining took place from April 14 to July 4. A formal report by the Director, including a financial report, will reach you in the near future.

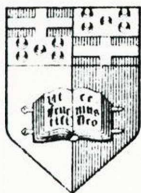
The programme was quite successful. There were 18 participants from 11 developing countries. Five scholarships were contributed by the Federal Republic of Germany, 2 by Mexico, 1 by the Netherlands, 2 by the EEC, 2 by UNDP, 1 by the Kummerman Foundation, and 5 from IOI funds. The quality of the teaching staff, which was recruited both from developed and developing countries, is indicated by the enclosed table of contents of an interdisciplinary Manual, which is one of the immediate results of the programme. This book will be published by Pergamon Press.

"Class A" will be repeated next year.

In the meantime, and thanks to a generous grant from CIDA Canada (\$100,000) we have initiated a second programme, "Class B," focusing on Economic Zone management. We spend no money on publicity or advertisement. The only published announcement was a small notice in Development Forum. The response has been quite impressive. We have already more applicants than we can handle for the first course in this programme, which will take place in Malta from September 28 to December 19. I am enclosing three of these reactions: from Dr. Paul Fye, from Ambassador Carias of Honduras, and from the Government of Ethiopia. I could add many more. The Director of this programme is Professor Charles Odidi Okici from Kenya. We are particularly glad to have a man from a Third-World country as Director. Again, our staff is absolutely first-rate.

I am enclosing a brochure which briefly describes the programme, and a document with a somewhat longer description. We are working closely with FAO as far as the management of living

International Ocean Institute



Old University
Msida - Malta (TEL. 36450)



Pacem in Maribus

- 2 -

Mr. J. de Koning

July 28, 1980.

resources is concerned, and with other U.N. Departments and agencies interested in other aspects of coastal management.

The Canadian grant covers preparations for the course and acquisition of teaching materials as well as six scholarships. We have to match this grant by raising additional scholarships. The kind of response we are getting obviously indicates a real need. We now have a framework where we can accept 50 participants from developing countries each year, 25 for each course. The programme initially is being planned for five years.

We would be deeply grateful if the Netherlands Government could contribute one, or if possible, two scholarships to the autumn, 1980 course ("Class B"). It would be ideal if this grant could be renewed, both for Class A and Class B, next year. Other scholarships are expected from the Federal Republic of Germany, Sweden, Mexico, Venezuela, the EEC and the UNDP. IOC has already pledged one, and we hope to get a few from FAO.

I need not stress how much we appreciate the continued interest of the Netherlands Government in our work. No matter what the result of the forthcoming session of the Law of the Sea Conference, we intend to continue our efforts to assist developing countries to take their place in this new phase of the industrial revolution which includes the penetration and utilization of ocean space. No matter what the outcome of the Conference, the concept of the Common Heritage of Mankind is here to stay, and the International Seabed Authority, whether actually realized at this time or not, will continue to exercise its influence as a model for a new international economic order to come. We hope that these efforts of ours can be considered as a small contribution towards the goals which are also the goals of the Netherlands Ministry for Development Cooperation.

Further documentation will follow in the near future.

With all good wishes,

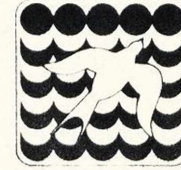
Sincerely yours,

Elisabeth Mann Borgese
Chairman Planning Council.
c/o Permanent Mission of Austria
to the United Nations
Rue Varambe' 9-11
Geneva Switzerland.

During August:

Department of Political Science
Dalhousie University
Halifax, N.S. B3H 4H6

XXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX



Pacem in Maribus

~~Santa Barbara, California, 93103, U.S.A.~~

May 24, 1979.

Mr. J. de Koning
Minister for Development Cooperation
Ministry for Foreign Affairs
The Hague, Netherlands.

Dear Mr. de Koning:

I was extremely happy to hear, through your UNCLOS Delegation, that your decision on both our proposals was favorable, that is, that we may count on a second grant for the Ocean Yearbook as well as on a scholarship for the Training Project.

On behalf of the International Ocean Institute, its Board of Trustees and its Planning Council, I wish to thank you most fervently for your interest and cooperation.

I should like to use this opportunity to express my deep appreciation for the constructive role played by the Delegation of the Netherlands during the recent session of the Law of the Sea Conference. If I should single out one Delegation for the most positive contribution to the work of this Session, I would unhesitatingly say it was the Netherlands' Delegation. As a token of my appreciation I am enclosing a statement, delivered by the head of my Delegation, Ambassador Wolf of Austria, commenting on Professor Riphagen's proposal which, in our opinion, may signify a major breakthrough towards the solution of the most knotty problem facing the Conference.

We will keep you informed about the progress of IOI activities.

With all good wishes,

Sincerely yours,

Elisabeth Mann Borgese
Chairman, Planning Council.



Pacem in Maribus

Please reply to:

P. O. Box 4716

Santa Barbara, California 93103 U.S.A.

October 15, 1978.

H.E. J. de Koning
Minister for Development Cooperation
Ministry for Foreign Affairs
Government of the Netherlands
The Hague, Netherlands.

Dear Mr. de Koning:

It is my pleasure to send you an advance copy of the Ocean Yearbook, Vol. I. The official publication date is in November. I am sorry it has taken so long. The delay was due to production problems at the University of Chicago Press. We feel that, since this is the first volume to appear, the delay is not too harmful, and quite certainly it will be possible to avoid similar delays in the future.

I am glad to report that we have already 2,000 advance subscriptions. Some Governments of developing countries have ordered more than one copy: e.g., the Government of Kuwait has ordered five.

I am enclosing some advance assessments, as well as a memo from the Press, showing what publications have expressed an interest in covering the Ocean Yearbook. Needless to say, we are rather pleased with these initial reactions. We feel that our assumption, that the Ocean Yearbook fills a gap in existing literature and will be of particular help to experts and governments in developing countries, is being revindicated.

Enclosed please find the table of content for Volume II which is in an advanced stage of preparation.

In view of this information, would it be possible for you to review the possibilities of renewing your grant of twenty-five thousand Dutch guilders? The grant would be spent article fees, editorial assistance and, if possible, the introduction of a computerized data retrieval system.

At the same time I am happy to inform you that plans for our Seabed Mining Training Project are proceeding on schedule. A first workshop will take place in Malta on December 6-11. I am enclosing a sample invitation. This has gone out to 38 individual experts, representatives of developing countries, technical institutions, and interested U.N. agencies and in-

H.E. de Koning

October 15, 1978.

stitutions (UNIDO, UNEP, IOC, UNESCO, ILO, UNDP, U.N. Secretariat, U.N. Department of Technical Cooperation, U.N. Office for Science & Technology). Their response has been extremely positive. The workshop is financed by an initial grant from SIDA, Stockholm. Further grants are expected from Algeria, the Saudi-Sudanese Joint Red Sea Commission, and Canada.

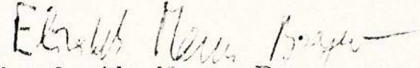
Among the experts who have most actively cooperated in the preparation for the Workshop and who are going to participate are also Dutch experts. In particular, Dr. Dijkstra and Professor van der Weele of Delft have been helpful.

Do you think there is any chance that you might consider cooperating with this project during the second phase, following the conclusion of the Workshop, which will require much larger financing? If so, would you be interested in sending an observer/participant to the workshop to help us to orient the programme in such a way that it may become eligible for support by your Government?

Also our third project, on Marine Resources, Ocean Management, and International Development Strategy for the 80s and Beyond, is proceeding on schedule. A first presentation of our results will be made at the Yaounde Pacem in Maribus IX Conference next January. I am enclosing a provisional draft agenda, as approved by the Cameroon Government.

Thanking you for your continued interest in our work,

Respectfully yours,


Elisabeth Mann Borgese
Chairman, Planning Council.

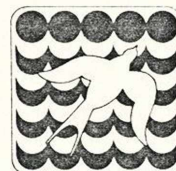
Encl: letters of OY appraisals and memo from the Press
Sample invitation to Training Project Workshop
Yaounde programme
Folder.

Table of Contents 24 Oct 78

Please Reply to:

Box 4716

Santa Barbara, California 93103



Pacem in Maribus

Rotterdam, January 27, 1978.

The Minister for Development Cooperation
Mr. J. de Koning
Plein 23,
THE HAGUE

Dear Sir:

Last year you contributed U.S.\$ 10,000 to assist the International Ocean Institute, Malta, to compile and publish the first volume of an Ocean Yearbook. The work on Vol.I has been completed, and it will be published, for the Institute, by the University of Chicago Press early in the spring. A Press announcement is attached (Annex I). A copy of the Ocean Yearbook will be presented to you as soon as available. A statement of accounts (provisional) for the first year is attached (Annex Ia).

We feel that, with Vol.I, a promising start has been made towards providing the kind of integrated data collection and interpretation, with regard to all uses of the marine environment and its resources, that is needed as a basis for international development planning for the 80s and beyond. We are now initiating work for Volume II, for which we have already assured the cooperation of all the pertinent U.N. agencies and institutions as well as of SIPRI and a number of individual experts in various fields of ocean management. We will also cooperate with the Third World Center in Mexico which, in collaboration with our Institute, has initiated work on a Third-World Marine Resource Data Bank which will feed into our Yearbook.

Volume II will be published in February, 1979. Volume III, in accordance with the plan submitted to your Ministry last year, will be published in February, 1980. You will note that your contribution constitutes about one third of the budget for the first year. It would therefore be of invaluable assistance to us if you could now decide to contribute D.Fl. 25,000 for Volume II, and, at least in principle, the same for Volume III. I would be grateful if you could advise me on this at your convenience.

Since your Ministry has been the sponsor of the RIO Report which, thus far, has remained the only world order study

The Minister for Development
Cooperation

January 27, 1978.

that has systematically integrated ocean management into development planning; and since your Ministry has generously financed a special study on The New International Economic Order and the Law of the Sea that developed out of the RIO Report and was published by our Institute, we would like to use this occasion briefly to explain to you our activities during the coming years, to invite your comments and, if possible, ask for your moral support and continued cooperation.

Besides the Ocean Yearbook, we are initiating two major projects this year. Both, we feel, are of general interest and fill major gaps in existing international cooperation and planning. They are particularly designed to make the International Ocean Institute useful to developing countries in their efforts to maximize their benefits from the vast resources of the oceans.

The first of these projects (Annex II) attempts to map the potential contribution of marine resources and ocean management to international development planning in the 80s and beyond. We have initiated discussions on this project with Mr. François van Hoek at the Economic and Social Department of the U.N. Secretariat. We are also going to approach Mr. Marc Nerfin of IFDA, whose own project, we feel, would be usefully complemented by our project. Given this complementarity on the one hand, and the vital importance of marine resources for development on the other, we would be grateful for your moral support with these two institutions. [Although this goes beyond the scope of this letter, I should mention that we have been discussing with Ambassador Jankowitsch of Austria the possibility of initiating another complementary study, viz. on outer space and development -- a linkage that is even more neglected than that between ocean space and development.]

Our second project (Annex III) deals with the training of experts from developing countries for participation in the organs of the International Seabed Authority. For this, we would like to enlist the cooperation, to start with, of two industrialized countries (West Germany: full cooperation already secured; see Annex IIIa; and we are about to approach Sweden) and two developing countries (we are planning to approach Algeria and Venezuela). We would be grateful for your reaction to this project, about which I shall soon have a discussion with the International Training Center for Aerial Survey and Earth Sciences (ITC) and possibly other institutions for international education in the Netherlands to examine their potential inputs into this program.

The Minister for Development
Cooperation

January 27, 1978.

Thanking you for your continued interest, and with the hope that there may be further opportunities to cooperate with your Ministry's pioneering efforts,

Respectfully yours,

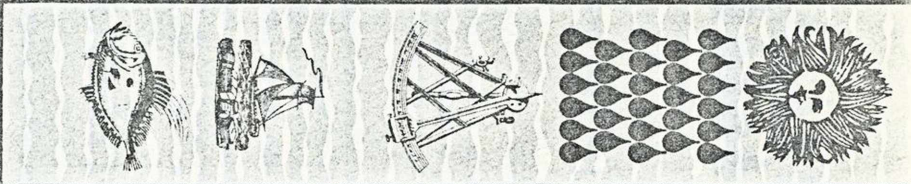
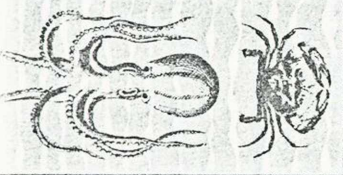


Elisabeth Mann Borgese
Chairman, Planning Council
International Ocean Institute
University of Malta
Msida, Malta.

ANNEX 1

OCEAN YEARBOOK

Published by
The University of Chicago Press



a unique comprehensive reference source and review on the resources ecology technology and strategic importance of the world's oceans

Special prepublication discount



- Please enter my order for Ocean Yearbook 1977 (ISBN: 0-226-06602-9) at the prepublication discount of \$20.00. After March 1, 1978, \$25.00.* I have enclosed payment. (Illinois residents add 5% sales tax)
- Please enter my order as a standing order. I understand that I will be invoiced and receive a 20% discount on subsequent volumes.
- Ocean Yearbook 1977 is scheduled for publication in early 1978.

*Price subject to change without notice.

Date: _____
 Total enclosed: \$ _____ (Please note: all standing orders will be invoiced.)
 Please mail to The University of Chicago Press, 11030 Langley Avenue, Chicago, Illinois 60628
 AD 9

Ocean Yearbook 1977
 Published annually in hardcover
 Please send me _____ additional brochures for distribution among
 colleagues and students and at meetings, seminars, and conferences.



Editors

Elisabeth Mann Borgese

Chairman, Planning Committee, International Ocean Institute (Malta)

Norton Ginsburg

Professor of Geography, University of Chicago

Editorial Board

Francis Auburn

Professor of International Law, University of Auckland

Frank Barnaby

Director, Stockholm International Peace Research Institute

Thomas Busha

Deputy Head of the Legal Division, Inter-Governmental Maritime Consultative Organization (a United Nations affiliate)

Sidney Holt

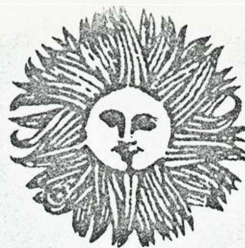
Senior Scientific Advisor on Fisheries and Environment, Food and Agriculture Organization of the United Nations

Arvid Pardo

Professor of Political Science, University of Southern California

Lord Ritchie-Calder

Associate, Center for the Study of Democratic Institutions (Santa Barbara)



A unique reference source

The oceans of the world

- contain vast energy, mineral, and food resources
- provide space for international trade and waste disposal
- are essential for the maintenance of national security and international communication

Yet no single publication systematically collects and interprets information on scientific and technical progress, advances in international law and commercial regulation, shifting naval organizations and power structures, and other developments affecting the future of the oceans.

Ocean Yearbook is intended to fill that gap, providing the authoritative data and broad surveys necessary for an understanding of the rapidly evolving economic, political, scientific, and social uses of ocean space.

A comprehensive review

Presenting an interdisciplinary perspective, each annual volume will contain:

The review of the year, a survey of the year's principal occurrences, summarizing important legislation, negotiations, scientific discoveries, and other ocean-related events.

Articles, collected under separate headings which in their entirety comprehend major ocean issues. The contributors, many of the world's leading experts, analyze and appraise recent developments and provide background information. Relevant tabular data, charts, and documents are included.

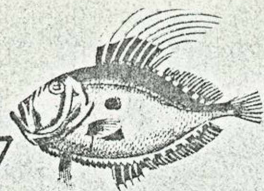
Appendices, a series of tables (to be updated annually), reports from institutions, and other pertinent documents.

An invaluable collection of data, a unique scope and impartial coverage—all of which are certain to make *Ocean Yearbook* indispensable to policymakers, scientists, scholars, corporate executives, and other individuals concerned with the fate of the world's oceans.

Edited by *Elisabeth Mann Borgese* and *Norton Ginsburg* and sponsored by the International Ocean Institute (Malta), the inaugural volume, *Ocean Yearbook 1977*, will be published in hardcover in early 1978.

APPET 1

Contents for Ocean Yearbook 1977



Consisting of over 600 pages, *Ocean Yearbook 1977* will include 22 major reviews collected under nine separate categories. As is fitting for an inaugural volume, each article will present a general overview of the topic covered.

Review of the Year

by *Elisabeth Mann Borgese and Arvid Pardo*

Living Resources

T. V. R. Pillay, Progress of Aquaculture

Sidney Holt, Marine Fisheries

Rudolf Kreuzer, The Cradle of Sea Fisheries

Nonliving Resources

Edward Symonds, Offshore Oil and Gas

Peter R. Odell, Oil and Gas Exploration and Exploitation in the North Sea

R. H. Charlier, Other Ocean Resources

Transportation and Communications

R. A. Ramsay, The Organization of Shipping

Thomas Busha and James Dawson, A Safe Voyage to a New World

also, *A Kolodkin* on communication satellites

Marine Science and Technology

A review of recent developments in their historical setting by *Lord Ritchie-Calder*

Environment

Peter S. Thacher and Nikki Meith-Avcin, The Oceans: Health and Prognosis

Robert A. Frosch, Charles D. Hollister, and David A. Deese, Radioactive

Waste Disposal in the Oceans

Coastal Management

A review of coastal area management and development problems and practices, from the U.N.

Military Activities (contributed by the staff of SIPRI)

Jozef Goldblat, The Sea-Bed Treaty

also, *Frank Barnaby* on strategic submarines and anti-submarine warfare,

Ronald Huisken on naval forces, *Arthur H. Westing* on the military impact

on ocean ecology, and the SIPRI (Stockholm International Peace Research

Institute) staff on the anti-submarine warfare problem

Regional Developments

Geoffrey L. Kesteven, The Southern Ocean: Economic Potential and Political Developments

Francis Auburn, The Legal Implications of Petroleum Resources of the

Ocean Yearbook Appendices



Approximately 40% of *Ocean Yearbook 1977* is devoted to appendices, containing essential ocean-related reports, documents, and data. Much of the information is of particular value when read in conjunction with text materials.

Reports from Institutions: Appendix A

Ten reports describing activities and accomplishments for the year from, among other institutions:

Inter-Governmental Maritime Consultative Organization (IMCO)

Scientific Committee on Oceanic Research (SCOR)

U. N., Ocean Economics and Technology

UNESCO, Division of Marine Affairs

U. N. Environmental Program (Mediterranean)

World Health Organization (WHO)

Documents and Proceedings: Appendix B

Eight documents, including (in their entirety):

Informal Composite Negotiating Text, Law of the Sea Conference (1977)

International Conventions and Other Agreements for Control of Marine Pollution (1977)

Joint Oceanographic Assembly (1977)

Convention on the International Maritime Satellite Organization (1976)

Convention on Limitation of Liability for Maritime Claims (1976)

Directory of Institutions: Appendix C

The Tables

The final three appendices are composed of tabular data. A concerted attempt will be made to update each of these tables annually. Occasionally, tables within the text will be moved to the tabular appendix and also updated on a continuing basis.

Tables on Living Resources: Appendix D

scheduled to include world nominal marine catch, world nominal fish catch, and trade of fishery commodities

Tables on Nonliving Resources: Appendix E

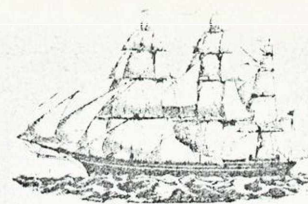
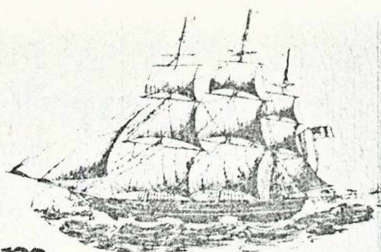
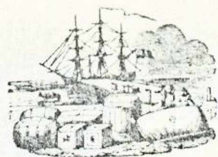
to include world and offshore production of oil and gas

Tables on Transportation and Communication: Appendix F

to include world shipping tonnage, world merchant fleets, merchant ships under construction, goods loaded and unloaded, vessels lost

Tables on Military Activities: Appendix G

A full description of the contents of Appendix G is given on the reverse as an example of the scope of Ocean Yearbook's tabular data



Sample articles from Ocean Yearbook 1977

Progress of Aquaculture

by *T. V. R. Pillay* (Fisheries Dept., FAO, Rome)

In recognition of the need to adopt large-scale methods of husbandry to meet future requirements for aquatic products, the author assesses present production capabilities, recent technological advances, the organization of aquaculture, and cooperative efforts. Pillay concludes that world production can be doubled in the next decade and enumerates the multiple benefits of such an enterprise.

Table: Estimated World Production through Aquaculture in 1975
Document: Kyoto Declaration on Aquaculture (1976)

Offshore Oil and Gas

by *Edward Symonds* (Private consultant in energy and economics; formerly Deputy Assistant Secretary responsible for U. S. energy policy)

This paper examines the progress and latest developments in offshore oil and gas production and considers the problems of pollution and ownership of resources. The failure of the United States to realize the potential of its resources, especially in comparison with other countries, is also discussed.

Table (a sampling): Estimated Ultimate Recoverable Reserves in Offshore Fields; Minimum Economic Field Size for Development; Offshore Oil Production; Offshore Gas Production; Worldwide Offshore Drilling Activity; Savings Resulting from an East Coast U. S. Monobuoy Superport

Charts: Two charts comparing rates of production (outer continental shelf) resulting from slow and from rapid leasing policies

Other Ocean Resources

by *R. H. Charlier* (professor, Flemish Free University of Brussels and Northeastern Illinois University)

In this survey of the potential uses of the ocean, Charlier concentrates on the raw materials—primarily minerals—that could be mined and the techniques designed for their extraction. He devotes equal attention to the possible exploitation of such energy resources as the tides, solar heat, wind, temperature differences, currents, geothermal power, and salinity.

Tables (a sampling): Recoverable Minerals; Reserves of Metals in Polymetallic Nodules; Mining of Unconsolidated Surficial Deposits; Estimated Value of Mineral Production; Estimated Value of By-Products from a Sea Thermal Power Plant

The Oceans: Health and Prognosis

by *Peter S. Thacher* (Deputy Executive Director, UNEP, Nairobi) and *Nikki Meith-Avcin* (Research Ecologist, Marine Biological Station, Portoroz, Yugoslavia)

The authors attempt to answer the question "How 'sick' are the oceans?" by describing the pollutants which have been introduced, their observed levels, predicted increase, and effects on marine life. Also considered are the international policies devised to counter the threat.

Tables (a sampling): Estimated Inputs of Petroleum Hydrocarbons; Tar Densities in the World's Oceans; Production of PCBs; DDT Residues and PCBs in a Variety of Plankton; Fluxes of Materials to Southern California Coastal Region; Total Litter Estimates

A Safe Voyage to a New World

by *Thomas Busha* (Deputy Head of the Legal Division, Inter-Governmental Maritime Consultative Organization) and *James Dawson* (Lloyd's of London)

Concerned with the ever-increasing loss of life and property at sea, Busha and Dawson describe the forces challenging safe navigation as well as the measures taken to combat them. The authors analyze the deficiencies and assets of present and proposed legislation for improving shipboard safety and stress the need for international cooperation in the face of the fragmentation of the oceans by "a new colonialism."

A sample appendix

Tables on Military Activities

The tables in this appendix fall into two categories. The first, compiled by Ronald Huisken of SIPRI and supplementary to his chapter on naval forces, includes data on the world stock of:

- fighting ships* (estimated value)
- aircraft carriers* (by country and type)
- strategic submarines* (by groups of countries and type)
- patrol submarines* (by groups of countries and type)
- coastal submarines* (by groups of countries)
- major surface warships* (by groups of countries and armament)
- patrol boats, torpedo boats, and gunboats* (by groups of countries and armaments)
- warship construction under way or planned* (by type and country)

The second group, composed of nine tables compiled by Frank Barnaby and Andrzej Karkoszka of SIPRI, provides a comprehensive summary of antisubmarine-warfare detection and weapons system.

ANNEX I a

Provisional Accounts for Ocean Yearbook, Vol.I

Expenditures

Authors' fees	\$ 13,600	
Editorial & clerical assistance (compilation of tables, typing)	9,000	
Office overhead (xeroxing tel.& tel., postage)	1,200	
Traveling	1,400	
Type-setting (photo-ready copy)	7,000	
	<hr/>	32,200

Note: the costs for production
(paper, design, printing), pro-
motion and distribution are borne
by the University of Chicago Press.
The Press also will pay a royalty of
17.5 percent, which will be applied to
next year's budget.

Income

General Service Foundation	15,000	
Gov. of the Netherlands	10,000	
Gulbenkian Foundation	4,200*	
Royalty from <u>Encyclopaedia</u> <u>Britannica</u>	3,000	
	<hr/>	32,200

-0-

*Due to the devaluation of the Portuguese
scudo.

Annex IIa.

FAO/NORWAY COOPERATIVE PROGRAMME

Project Proposal

I TITLE: Evaluation of Requirements for Global Development of Fisheries with special reference to aid inputs

Recipient Country: Global

Duration: Preliminary Phase: 6 months
Operational Phase: 18 months

Donor Contribution: Preliminary Phase U.S.\$
Operational Phase U.S.\$

II BACKGROUND:

Having regard to the economic, nutritional and employment situations in the developing world, the full and rational exploitation of the resources of the sea is a moral imperative no less than a potentially efficient path to improvements in global welfare.

Impending changes in the Law of the Sea, and the consequent expansion of exclusive economic zones, as well as the concepts implicit in New International Economic Order, present many developing nations with new opportunities and responsibilities for the development of world fisheries.

There is no possibility of a "world plan" for fisheries development since the vital decisions are taken at national level by governments and private investors. The efficiency of the development process depends upon the choice

of effective strategies at the national level. However, development depends very substantially upon aid and preferential finance for its implementation, and it is correct to envisage a global "aid strategy" which could specify the levels and different types of development assistance required for the most efficient path towards full utilization.

Such a strategy would be of the utmost value to donor agencies, international financing institutions and international development agencies in ordering their priorities and programmes. Apart from helping to marshalling and coordinating available assistance, it would be of very great value to governments in the determination of their programmes of development and in their choice of development strategies. It would hopefully become an ongoing function of the Department of Fisheries and become an important influence in the determination of its policies and programmes.

Situation

Since the 1950's FAO has been engaged, in various ways, on a World Survey of Living Aquatic Resources, developing both methodology and research, and culminating in the publication of "Fish Resources of the Ocean" and its revisions. It is considered that the resources constraint on development is now sufficiently defined to permit an attempt at a quantitative assessment of the inputs necessary to attain optimum sustainable yields.

Decisions as to the optimum level of resource exploitation depend as much on social and economic factors at the national level as on resource

characteristics, and an evaluation of development possibilities must take account of national economic circumstances and governmental priorities.

Various divisions of the Fisheries Department have accumulated a wide range of data, experience and expertise, not only in resources evaluation, but in market and demand studies, fish utilization, fishing technology and statistics, and the Field Programme provided wide coverage and detailed information about local fishery situations.

What is now required is a mechanism and a systematic method for coordinating and integrating these activities to produce, first a set of efficient development strategies at the national level, worked out in collaboration with Governments, and specifying the inputs, both locally-supplied and from outside assistance, necessary to their fulfilment, and secondly the aggregation of these estimates, regionally and globally, to provide the outlines of a world strategy for fishery development aid and assistance activities.

At the present time, FAO is unable to fund such an activity from budgetary sources, and assistance is sought for financing a specific project to be based at Headquarters, to undertake and coordinate this work. It is hoped that, in due course, such a central development planning function would become an integral part of the Department's structure.

III PURPOSE AND NATURE OF THE PROJECT

The purpose of the project is to obtain a global evaluation of the assistance inputs necessary to achieve optimum exploitation of available marine resources, having regard to the social and economic priorities of governments, and feasible time-scales. It is essentially a planning and coordinating project, seeking to integrate a wide variety of the Department's regular and Field Programme activities with information and analysis at the national level.

An important output of the project will be the stimulation of fishery sector planning at the national level and the non-formal training of national staff, as well as the development of planning methodology in the fisheries sector.

However, the primary objective is to improve the capability of the Fisheries Department of FAO to advise donor agencies and governments on aid requirements and strategies, to improve estimates of development needs and to better identify and programme aid inputs.

IV DESCRIPTION AND WORK-PLAN

The assembly and analysis of the data required for this project will be a large task and require the services of a large number of specialist staff in the Department of Fisheries and in the Field Programme. It will require the prior creation of a communication system, and standardized,

methodology and sub-systems for diagnosis and appraisal of fishery situations. It is a pre-requisite that the cooperation and support of member Governments be assured.

In a study of the proposed magnitude there are inevitably, at the present time, a number of unresolved methodological and conceptual issues, amongst which may be mentioned, for example, an operational definition of a fishery, and of optimum effort, the treatment of multi-species, and multi-national fisheries, the trade-offs between various kinds of assistance, e.g. short-term technical assistance versus longer-term training

It is therefore proposed that the project be considered (?) in two phases; a preliminary planning phase lasting six months, and an operational phase to last a further eighteen months.

A. PRELIMINARY PHASE - Work Plan -

In the preliminary phase, the Programme Leader and core staff will be appointed, and with the help of consultants, will define the concepts and procedures to be used in the study.

In particular, the project will:

1. Prepare a standard manual of definitions, concepts and procedures to be used in the substantive phase of the project.
2. Develop a system of coordination and communications for the substantive phase, including a meeting of key field staff.

3. Inform and request the assistance of Governments in undertaking the study.
4. Evaluate the data currently available for the study and make proposals for remedying deficiencies.
5. Define the statistical and computational system to be employed.
6. Test the systems developed in some actual country situations, (Venezuela, Brazil, Mozambique).
7. Towards the end of Phase I, prepare a detailed work-plan for Phase II.
8. Prepare a detailed amount of the activities and results of Phase I, for submission to the Committee on Fisheries, and donor agencies.

B. SUBSTANTIVE PHASE - Work Plan -

The Preliminary Phase will specify the work-plan in detail. In general, the substantive phase will include the following activities:

1. Assembly of fishery and country data in standard format
2. Analysis and diagnosis of existing fishery situations
3. Propose efficient outline development strategies, for clearance with Governments.
4. Analysis and classification of inputs necessary to implement development strategy.

5. Specification of optimal aid programmes
6. Aggregation of results on regional and global basis, by types of assistance.
7. Preparation of final report.

COST ESTIMATES

Preliminary Phase 6 months 1978

	<u>US\$</u>
10. <u>Personnel Services</u>	
Project Leader (1) D-1	30,240
Planning Economists (3) P-4	82,800
Admin. Officer (1) P-2	18,840
Consultants	55,200
Secretarial assistance (2 x G.4)	15,240
20. <u>Official Duty Travel</u>	15,000
30. <u>Contractual Services (Reporting Costs)</u>	5,000
40. <u>General Operating Expenses</u>	10,000
Component Total	<u>\$ 232,320</u>
90. Project Servicing Costs (14%)	32,525
TOTAL	<u><u>\$ 264,845</u></u>

NB. These estimates do not include the costs of Divisional Inputs to the Programme.

Costs for Phase 2 will be estimated in detail in Phase 1. Provisionally they would be of the same order, US\$ 800,000 plus inflation, over 18 months.

28 November 1977

ANNEX III

INTERNATIONAL MANAGEMENT OF SEABED MINING

The IOI is initiating a program to train experts and technicians, especially from developing countries, for appointments to positions in the International Seabed Authority.

The International Seabed Authority will be an entirely new type of international organization, requiring an entirely new type of civil servant.

After discussions with representatives of both developed and developing countries, the IOI is convinced that a training program of the kind outlined in the enclosed memorandum is of the greatest urgency.

The areas in which special training is required are outlined on pp. 3-5. As stated in the memorandum, the program has to rely to the maximum extent possible, on the cooperation of existing programmes and institutions.

The Netherlands

For example: The International Institute for Aerial Survey and Earth Sciences has courses listed ("Basic Data on International Courses Offered in the Netherlands 1978/79") on Mining Exploration and Exploration Geophysics; on Integrated Surveys (Multidisciplinary Investigations for Development Planning); and on Advanced Studies in integrated surveys. These courses would appear to make a valid contribution to the kind of training we have in mind. IOI would be grateful for an indication of the form that cooperation between our programmes might take in financial and organizational terms.

Similarly, IOI is interested in the International Course for Hydrologists, the International Course Sanitary Engineering and the International Course in Environmental Science and Technology, offered by the International Institute for Hydraulic and Environmental Engineering, the International Course on Advanced Training for Industrial Management, by the Research Institute for Management Science.

Conceivably each of these courses would have to add new elements to serve IOI needs.

Federal Republic of Germany

We have discussed the project with the Rector and the Faculty of the University of Aachen. That University has probably the best facilities in Europe for training in nodule exploration, nodule-raising technology, and nodule processing.

The University has assured us of their fullest cooperation in designing special curricula. A meeting between the Director of our Institute, Dr. Kesteven, and the Project Director, Dr. Vella Bonavita, and the Aachen staff has been set for February 11/12. The Rector of the University of Aachen, Dr. Knacke, will take the question of initial funding up with the German ministry for development cooperation.

Consequent on the participation of representatives of the German industry in our consultations at Pacem in Maribus VIII in Mexico, and our recent discussions in Frankfurt with the General Manager of A.M.R. and his staff, we can count on the full cooperation of the German industry, as illustrated by a letter from Dr. Blissenbach of A.M.R. (Annex IIIa).

Initial Funding

To facilitate the start of the project, an interim budget, covering the first six months of the project, has been prepared (Annex IIIb). This is now being submitted to the Governments of the Federal Republic of Germany, Sweden, Algeria, and Venezuela.

INTERNATIONAL OCEAN INSTITUTE

INTERNATIONAL MANAGEMENT OF SEA-BED RESOURCES

A proposal for arrangements to assist Governments, of especially of developing countries, to prepare for their participation in the work of the principal organs of the Sea-bed Authority, in the Enterprise, and in such subsidiary bodies of the Authority as it may establish.

I.O.I.

Malta,

December, 1977.

INTERNATIONAL MANAGEMENT OF SEA-BED MINING

Background

The Informal Composite Negotiating Text, in Part XI (Articles 133 to 192 and Annex III, II and V) , provides for establishment of

an ASSEMBLY, consisting of all members of the Authority;

a COUNCIL, consisting of 36 members elected by the Assembly;

and a SECRETARIAT

as principal organs of the Authority; and, as organs of the Council,

a TECHNICAL COMMISSION, composed of 15 members appointed by the Council,

an ECONOMIC PLANNING COMMISSION, composed of 18 experts appointed by the Council,

and a RULES AND REGULATION COMMISSION, composed of 15 members appointed by the Council;

in addition the Enterprise is to have

a GOVERNING BOARD, composed of 15 members elected by the Assembly,

and its own STAFF;

finally, there is to be

a SEA BED DISPUTES CHAMBER, composed of 11 members selected from among members of the Tribunal.

Participation in the work of these bodies will call for highly qualified, and in many cases very specialised personnel. The Experts, members of the Economic Planning Commission "shall have appropriate qualifications and experience relevant to mining and the management of mineral resource activities, and international trade and finance". The Experts, members of the Technical Commission, "shall have appropriate qualifications and experience in economics, the management of mineral resources, ocean and marine engineering and mining and mineral processing technology and practices, operation of related marine installations, equipment and devices, ocean and environmental sciences and maritime safety, accounting and actuarial techniques". The members of the Rules and Regulations Commission, "shall have appropriate qualifications in legal matters, including

those relating to ocean mining and other marine matters". The Tribunal is to be composed of persons (from among whom are to be selected the eleven members of the Sea-bed Disputes Chamber) "enjoying the high reputation for fairness and integrity and of recognized competence in matters relating to the law of the sea". The secretariat of the Authority and the staff of the Enterprise will be composed of highly scientific and technical officers specialised in the various fields to which the powers and functions of the Authority relate.

The wide range of the matters with which these organs will have to deal, and the technical nature of those matters, are shown in the fourteen items of Article 163 (2), relating to the Technical Commission, and similarly in Article 160 describing the powers and functions of the Council, and Article 158 describing the powers and functions of the Assembly.

The members of the Assembly, apart from dealing with procedural and administrative matters (Art. 158, i, ii, iii, iv, v, vi, vii, viii, ix, xv and xvi), must examine periodic reports (x), make studies and recommendations for the purpose of promoting international cooperation and encouraging the progressive development of international law (xi), adopt rules etc. for equitable sharing of financial and other economic benefits derived from activities in the Area (xii), consider problems of a general nature in connection with those activities (xiii), and establish a system of compensation (xiv). The procedural and administrative responsibilities include the selection of members of organs and the appointment of officers with technical qualifications.

The Council similarly will have procedural and administrative matters to deal with (Article 150, ii, iii, iv, v, xv, xvi), and will be responsible for supervising and coordinating the implementation of the provisions of Part XI of the Convention (i), entering into agreements with the UN and other intergovernmental organizations (vi), examine and present reports (vii, viii), issue directives to the Enterprise (ix), approve plans of works (x), exercise control over activities in the area (xi), adopt measures to protect against adverse economic effects (xii), recommend a system of compensation (xiii), review the collection of payments (xv), and recommend policies and procedures (xvii).

It is obvious that the work of the Authority will have a considerable technical element, and that this will be true for the Assembly as well as for the other organs of the Authority. Effective representation of Member States in the Assembly and Council will require, in addition to the diplomatic skills for negotiation and the ability to participate in procedural and administrative matters, a knowledge of the technology of sea-bed mining, and of its financial, economic, legal, social and political aspects. The work of the Commissions, of the Governing Board of the

Enterprise and of the Sea-bed Disputes Chamber will be still more specialised and technical.

The work of the Authority will call for participation at the following levels:

- A. of policy-making and overall direction in the Assembly,
- B. of supervision and general management in the Council,
- C. of conducting the affairs of the Enterprise in the Governing Board,
- D. of economic, technical and legal research and advising, in the Commissions, and the exercise of jurisdiction with respect to disputes, in the Sea-bed Disputes Chamber,
- E. of administrative work of a scientific and technical nature in the Secretariat and in the Staff of the Enterprise.

In practical terms, the matters to be discussed in the organs of the Authority, and about which decisions will have to be taken - variously, according to the level of work - are such as the following:

1. Nature and distribution of resources to be managed including composition, locations, quantities, mechanism of formation and so on.
2. Factors influencing choice of location for exploitation such as topography of sea-bed, soil mechanics of bottom sediments, sea state conditions, depth of water, proximity to processing locations.
3. Details of machinery for harvesting nodules and other resources.
4. Details of means of raising nodules and other materials to surface such as air lifts, dredges and so on.
5. Level and sources of power needed for recovery operations.
6. Requirements for "motherships" for recovery equipment and ships or barges for transporting nodules and other materials to processing plants.
7. Nature and **possibility of effects on environment** and ecology and any necessary precautionary measures.

8. Processes for treating nodules for extraction of metals, and for treating other materials, forms to be marketed, reagents involved, residues to be disposed of, location of operations.
9. Channels for marketing and relation of supply from sea-bed sources to supply from other sources with respect to supply vs demand situations and effects on prices and scale of operations.
10. Capital requirements for operations and sources of capital.
11. Bases of estimating return on investments.
12. Bases of imposing fees for rights of access.
13. Procedures for monitoring payment of fees, royalties or share of profits.
14. Principal uses of nodule metals and future trends.
15. Bases for allocating revenues to authority for administration, and to developing countries, research and so on.

The participants in such work will require formal education and practical experience in subjects such as the following:

- marine science and in particular ecology, and pollution research
- ocean and marine engineering (marine installations, equipment and devices)
- mining technology and mineral processing technology
- marine medicine
- economics
- Management of marine and mining enterprise
- accounting and actuarial science
- international trade and finance
- maritime law
- international law
- international affairs.

Each level of participation will require a particular range of subjects and type of training and experience as is indicated in the following specifications:

At level A

knowledge of the economic, financial, social and political aspects of exploitation of the resources of the seas, including the production of, trade in and use of minerals of the kind available from the Area and familiarity with the technical terminology of sea-bed mining and its related industries, so as to be able to participate in the formulation of the policies of the Authority; and experience with procedures and practices of intergovernmental bodies so as to participate in elections, budgetary deliberations, the formulation of rules and regulations, and examination of other administrative matters.

At level B

knowledge of the technology of sea-bed mining and related industries and of the management of enterprises engaged in such activities, of international procedures for the control of such activities, and of the economics of international trade in minerals, so as to be able to participate in the formulation of specific policies, the supervision and coordination of implementation of the provisions of that Part of the Convention that relates to the Area and the Sea-bed Authority, the issuance of directives to the Enterprise and control over its activities, the approval of a plan of work for conduct of activities in the area and control over such activities, adoption of measures to protect against adverse economic effects, and recommendation of a system of compensation; and experience with the procedures and practices of intergovernmental bodies so as to, participate in elections, budgetary deliberations, the formulation of rules and regulations, and examination of other administrative matters.

At level C

knowledge of the technology of sea-bed mining and its management and financing, considerable experience in the management of industrial enterprises, and high qualifications in public and private administration.

At level D

The experts of the Economic Planning Commission, who shall have the qualifications specified in Art. 162 para. 1, quoted earlier, will apply their skills to reviewing "the trends of, and factors affecting, supply, demand and prices of raw materials which may be obtained from the Area, bearing in mind the interests of both importing and exporting countries, and in particular the developing countries among them"

The experts of the Technical Commission, who shall have the qualifications specified in Art. 163 para. 1, quoted earlier, make recommendations to the Council, advise the Council and its other organs, prepare studies, reports, and assessments, supervise operation, direct and supervise staff of inspectors, inspect and audit books, records and accounts, issue orders, disapprove areas, and review plans of work.

The members of the rules and Regulations Commission, qualified in legal matters, will formulate rules, regulations and procedures and keep them under review.

At level E

knowledge of and experience in a set of specializations but with special administrative skills in collecting, compiling, analysing and interpreting data and information, and in setting up and managing international exchanges and cooperation with respect to such information and to the activities from which it is drawn and in which the results of processing it, are applied.

Since research on and exploration of the resources of the area and development of the technology of exploitation has so far been effected by relatively few countries, most countries will have to take vigorous action to acquire and develop a competence to participate in these several levels, but the task confronting the developing countries will be especially onerous.

Apart from their presence in the Assembly, the developing countries will be represented on the Council by the eight members elected under Article 159, 1(d) and (c) and by others as may be elected to any of the eighteen seats specified by paragraph 1(e) of Article 159. In addition, these countries will wish to nominate experts for appointment to the Economic Planning, Technical, and Rules and Regulations Commissions and the Tribunal. Finally they will wish to offer specialist personnel for appointment to the Secretariat of the Authority and to the Staff of the Enterprise. Whilst they might not find much difficulty in providing personnel with requisite diplomatic and political skills, they are likely to find great difficulty in providing a sufficient number with the specialised economic, scientific and business expertise that will be required for appointment to the Economic Planning, and Technical Commissions.

The qualifications indicated in the specifications above are to be acquired in a variety of ways which in some countries are open through established educational processes but in the developing countries are open only partially, or even not at all. In brief, their acquisition

for the purposes of public administration and international negotiation is a concomitant of the development of the industry. As in other fields, most of the qualifications are acquired through basic training followed by experience in research, industrial operations or administration, or some combination of these. But in this case the characteristics of the industry, of the resources it exploits and of the circumstances in which it operates, are such that much is peculiar to it and to be learned only in the activity itself; this means that general training is not sufficient by itself and that much specialised training in other fields is inapplicable; and thus direct access to and participation in the activity is an indispensable element of training.

Candidates from a few of the advanced countries will be able to meet part of these conditions, essentially those of background (academic) training, and of opportunity for operational experience; but it is a further characteristic of the situation that the facilities for specialized background training are available chiefly in those countries that already have the technology.

A country's ability to participate adequately at the several levels of the work of the Authority will involve, in addition to deployment of personnel with the required qualifications, adoption of measures to ensure that its personnel will have access to up-to-date information on the state of the industry in all its sectors, on technological developments and on related matters. Multi-lingual glossaries will be necessary, as will suitable technical manuals on the activities in their various aspects; indicative compendia of statistical information and of intelligence on current activities also will be required, and will have to be kept up-to-date.

It is a principle of the ICNT that the Authority should ensure that developing countries will have opportunity and the capability to participate in the exploitative activities (inter alia Art. 148, Art. 150, 1(b), 1(g) and 2(b)), and in research (Art. 143); the Authority has therefore to promote the transfer of technology (Art. 144), and applicants for contracts with respect to exploration and exploitation must give an undertaking to train personnel of the Authority and of developing countries (Annex 2, paragraph 9). But, while these arrangements will enable the developing countries, in time, to participate in the activity as such, they are unlikely to equip the developing countries for participation in the work of the Authority and its organs especially during the critical initial period, up to the Review Conference. The IOI believes that special arrangements should be put into operation without delay to assist governments in meeting these problems and for this purpose proposes the following plan of action.

Proposed Action

A programme should be initiated immediately a) to provide information about required qualifications, b) to provide assistance towards acquisition of necessary qualifications and c) to prepare the glossaries, manuals and compendia mentioned above.

This programme would be carried out in four stages:

- I. Analytical studies of the required qualifications, means available for acquiring such qualifications and as necessary design of new curricula.
- II. Preparation of a manual of minimum and desirable qualifications related to the functions of the Authority, with indication of the courses and practical experience by which such qualifications are to be acquired and of where (in which institutions, enterprises etc.) such training can be acquired.
(This manual would be given wide distribution, and would be accompanied by announcement of plans for Stage III).
- III. Crash course on the convention, primarily for the technical personnel of Levels C and D, but with orientation for those of other levels. Formulation of plan for preparation of manuals (on sea-bed mining technology, and on enterprise management), of glossaries and of compendia (essentially of indicative type).
- IV. Continuing arrangements to provide stop-gap training and to provide opportunities for the more substantial professional, technical training. Continuing arrangements for revision and up-dating of manuals, glossaries and compendia.

In this programme the IOI's role could be

- (i) to carry out preliminary studies from which to formulate an action plan;
- (ii) to prepare outlines for manuals, glossaries and compendia;
- (iii) to undertake such contribution to manuals, glossaries and compendia as may be necessary to ensure their speedy availability;
- (iv) on the request of governments of developing countries to assist them to make appropriate arrangements for the training of personnel;
- (v) to provide, as may be necessary, specialised courses to fill gaps in the available training programmes, and in particular to be responsible for conduct of the crash-course on the Convention mentioned in Stage III.

A major feature of the strategy of this project is that (a) fullest recourse would be made to existing facilities for training in the indicated areas, (b) wherever possible arrangements would be made with existing institutions to establish special courses that might be required but for which provision does not already exist, and (c) the project would provide actual training only in such areas as could not otherwise be provided for. In the case that some Agency assumed operational responsibility for all training, the project would serve only in a co-ordinating and overseeing capacity. In any case, an important task for the project director, assisted by the coordinating committee, would be to discuss with existing institutions the part they would be willing to play in this programme.

Operational Strategy and Programme.

In view of the possibility of the Authority being established in 1979, some urgency attaches to this programme; it would seem that the project should aim at effecting Stage III in the latter part of the second half of 1978. Stages I and II therefore should be accomplished during the first half of 1978, and preparations for Stage III should be initiated, also, in that period. Stage IV would come into operation almost immediately upon completion of Stage III.

Some part of Stage I could be begun without delay, more especially the preparation of a schedule of required studies and preliminary enquiries about the availability of specialists to undertake them. A small informal management committee has been named to be responsible for:

- a) directing and participating in the preliminary analysis.
- b) preparing a budget.
- c) preparing a detailed plan of work and time-table.
- d) generally directing the project.

It will be necessary to appoint a full-time project director, as soon as funds become available.

It is confidently expected that responsibility for this project will eventually be assumed by some other international agency. The negotiations to arrange that assumption of responsibility might, however, be protracted and the initial organizational steps might be time-consuming. It would probably be advisable therefore to plan that such transfer of responsibility if it were to take place, should take effect with respect to Stage IV.

In view of the urgency of the need however IOI proposes to get on with the project until such time as one or other of these agencies can be persuaded to take it over.

A provisional budget for the first two years of operation is annexed.

Proposed Budget

	US\$	
Regular staff for the project		
Director, at UN P5 level	50,000	
Asst. Director, at UN P4 level	40,000	
Secretary	15,000	
Office expenses	20,000	
Travel	10,000	
	<hr/>	135,000
Studies, Manuals, and management committee		120,000
Crash-course (for 30 students for 3 months)		
Lodging etc of students	90,000	
Travel of students	60,000	
Teaching staff (honoraria etc)	45,000	
Travel of teaching staff	25,000	
Incidental costs	25,000	
	<hr/>	245,000
		<hr/>
		500,000

This budget is only indicative; nothing more precise can be prepared until decisions are taken on such matters as numbers of students, venue of the course, scope of the course and kinds of field experience and so on. In particular it is to be noted that no provision has been made for administrative over-head changes.

ANNEX II

MARINE RESOURCES, OCEAN MANAGEMENT AND INTERNATIONAL DEVELOPMENT STRATEGY FOR THE 80S AND BEYOND

This project attempts to map the potential contribution of marine resources and ocean management to international development planning in the 80s and beyond. While this aspect of development planning could be overlooked in the 60s, its omission was already a serious defect in the 70s. In the 80s such an omission would be an absurdity. Yet, the working papers presently under elaboration by the ACC ad hoc committee make hardly any reference to marine resources and ocean management. The Marine Resource Department of the U.N. Secretariat is making a study on mineral resources. This, however, is of a fragmented and quantitative nature. It cannot attempt to provide a conceptual framework for the integration of ocean management into development planning.

FAO is initiating a major study to assess the costs of developing the world's fisheries and aquaculture potential to the year 2000 (Annex IIa). The first phase of this project, with a grant of U.S.\$5,000, was entrusted to the International Ocean Institute. We are presently discussing a contract for the second phase (six months, \$30,000-40,000) to be granted to the IOI. This seems virtually assured. The FAO project will be carried out in close connection with the over-all project described in Annex II.

Other institutions that will be involved are Dalhousie University, where I shall spend the next academic year as a visiting fellow, and the University of Southern California, where Dr. Pardo is doing his work at the Institute for Marine and Coastal Studies.

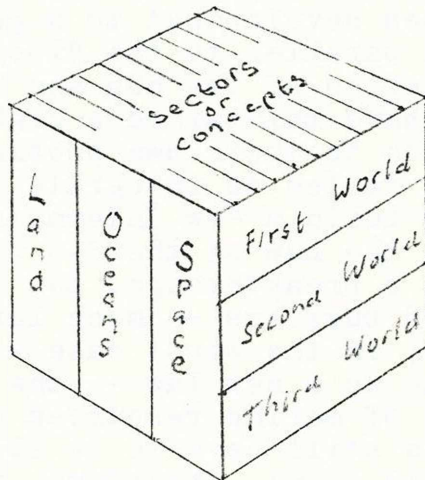
MARINE RESOURCES, OCEAN MANAGEMENT
AND
INTERNATIONAL DEVELOPMENT STRATEGY FOR THE 80S AND BEYOND

Introduction

1. Development is a multidimensional problem which needs comprehensive treatment in any strategy for the 80s and beyond. At least three dimensions, or planes, have to be distinguished:

- development sectors and concepts, such as food production, industrialization, technology transfer, trade, etc., self-reliance, participation, sovereignty, ownership, disarmament, etc., and their interactions;
- causes and effects in the First, Second, and Third World, and their interactions;
- potential contributions of, and effects on, land areas, oceans, and space (atmospheric and outer space), respectively, and their interactions.

These relationships could be described in a three-dimensional model as follows:



If, in this model, one were to plot the strategies of the 60s and 70s, one would become aware of strange imbalances and blank spots. Thus the complex interactions between disarmament and various development sectors have remained practically unexplored.¹ And while there is a dense network of well-described interactions between land areas and all sectors of development, there is a conspicuous lack of explored and acknowledged links between development sectors and concepts and space where the effects of resource satellites on development (land-use, forestry, mineral exploration, water management) and, therefore, the interaction between the making of space law and development have yet to be traced. Even more surprisingly, there is a near total lack of recognized connections between development sectors and concepts on one side and the oceans on the other.

The strategy for DD2 contains one section on "Invisibles including shipping," with recommendations for the development of shipping lines in developing countries and improvements in the liner conference system. The word "fisheries" occurs only once, in a paragraph recommending "appropriate strategies for agriculture (including animal husbandry, fisheries and forestry)." Special measures in favor of land-locked developing countries are considered, but only with regard to trade and transit and the development of transport and communications infrastructures.

-- as though food from the sea could not make a major contribution to solving the world's food problem especially in the poorer countries; as though marine energy resources had not to be included in world energy planning; as though marine technology transfers were to be treated separately from other transfers; mineral resources were exclusively land-based; transnational enterprises were operating on land only; the arms race did not impinge on the oceans as it does on land; and the structural changes in the international order and in the organs and agencies of the United Nations could be cut off from those dealing with the economy and ecology of the oceans.

2. Obviously the making of the new Law of the Sea is going to have a considerable impact on the potential contribution of marine-resources development to a general development strategy. But, in parallel to the "isolationism" of the development strategies of the 60s and 70s, the Law of the Sea negotiations have maintained a highly sectorial and legalistic approach to their own problems. The Conference, on the whole, has failed to integrate its efforts into the broader effort to build a New International Economic Order. In the best case, the Law of the Sea Conference will have made a beginning, a breakthrough, but will leave a great deal of unfinished business -- much larger than the agenda of the Conference; in the worst case -- were the Conference to fail in drawing up a new law -- the problems of utilizing the potential of marine resources effectively and without conflict would still have to be solved by the world community. At this point, therefore, action at the level of development planning and cooperation is at least as crucially important as action at the Law of the Sea Conference.

3. There is only one country in the world that has fully integrated the development of its aquatic resources into its general development plan, and that is the Peoples Republic of China. In China, aquaculture is conceived as an integral part of agriculture. Agriculture, aquaculture, and navigation are seen to have a common matrix in water management, and water management thus is given a top priority in national planning. The results of this policy, in two brief decades, have been astonishing: for agriculture, for navigation, and for aquaculture. Suffice it to mention that China alone produces today almost half of all the world's aquaculture products and that fish and aquatic plants make

a vital contribution to people's nutrition. There is a great deal the world community could learn from the Chinese experience with a unitary, land- and water-based concept of development strategy. China's economy, of course, is primarily an inward-oriented economy. Its water management extends to its rivers, lakes, ponds, canals and reservoirs, whose surface has been increased a hundredfold over the last two decades. China has not applied the same energies to ocean management which, perforce, is the domaine of international action and responsibility.

The oceans are the lakes and rivers of the international community. Water conservancy and management policies at the world level, integrating the uses of the oceans and conceiving mariculture as an integral part of agriculture, could, over the next decades, reach similarly spectacular results. Here is a great new opportunity for the Strategy.

4. To meet this challenge, goals must be established and policies must be determined. The setting of goals, in particular, is a task of a conceptual nature. It is felt that, in this type of work, the contribution of non-governmental organizations can be more successful than work at the inter-governmental level which, although essential at the negotiating stage, is less effectively geared to conceptual innovation. This is the reason that motivates the International Ocean Institute (Malta) to undertake this project.

5. While filling in this particular "blank spot," the project should also appraise the obstacles which, thus far, have prevented the needed interaction between the making of a NIEO, and the appropriate strategy, and ocean management and the making of the new law of the sea. These must be sought in three areas:

- . the traditional departmentalization and the fragmentary approach of intergovernmental activities;
- . the immediate, and hopefully temporary, divisiveness of ocean interests and policies among developing countries (landlocked versus coastal states; mineral exporters versus mineral consumers; Latin American interests versus African or Asian interests, etc.); and
- . the novelty of the problems of ocean management.

Such an appraisal, too, can be made far more effectively by an NGO than at the intergovernmental level.

Scope of the Project

6. Ocean management is construed here in the widest sense. It comprises the management of

- . living resources (fisheries and aquaculture and their contribution to the satisfaction of world food needs);
- . offshore oil production;
- . mining of marine minerals, especially the deep-sea manganese nodules;
- . energy resources and technologies (there is a wide range of new technologies to extract energy from ocean thermal differentials, tides, currents, waves, tec.);
- . marine sciences, including climate modification (ocean/atmosphere interface);

- . navigation and communication;
- . artificial habitats, harbors, etc.;
- . waste disposal and environmental protection;
- . sea-borne trade;
- . multinational entities and transnational enterprises;
- . regional organization;
- . an ocean development tax.

Thus the project must explore the interaction of marine resources and ocean management with practically every development sector or concept of importance. It must aim at filling the "blank spots" in development/ocean interactions not only in the Strategy but in a wide range of regional intergovernmental and nongovernmental programmes and instruments essential to its implementation.

7. Perhaps 80 percent of marine resources are located on, below, and above the legal continental shelves, in areas which, with or without a new Convention on the Law of the Sea, will fall under national jurisdiction. Planning for coastal zones under national jurisdiction must, from now on, be an essential part of national and international development strategy. Such planning raises a number of conceptual issues and practical problems. Here are some examples:

(a) For some countries (coastal States, mostly industrialized) the newly acquired areas under national jurisdiction constitute a great potential and a great challenge.² For some (especially developing island States), they require the conception of a totally new development strategy.³

For a great many other countries (landlocked, geographically disadvantaged developing States) they imply great difficulties and problems: e.g., a number of developing States will be adversely affected by the new obligation to pay license fees for fishing in areas where they have traditionally fished. The "sovereign rights" of some coastal States over the living resources in their coastal zones may wipe out the fisheries, and the livelihood, of neighboring developing countries.

(b) It will be practically impossible for any country, no matter how large, to establish a rational system of management for the exploitation of the living resources under its jurisdiction without the establishment of an equally effective management in neighboring countries and in the area beyond national jurisdiction, and without effective coordination and interaction of these systems, considering the nature of the resource and of the environment. This raises new issues of an institutional character and places new responsibilities and new functions on regional fishery organizations.

(c) A number of factors (overfishing of commercial species; legal restrictions; rising costs of fuel) converge in giving an unprecedented impulse to the development of aquaculture and mariculture in coastal zones.⁴ Cultured resources, however, are not "natural resources" in the traditional sense. The new legal and institutional requirements of aquaculture must be explored and its development potential, with regard both to nutrition and employment,

must be considered in any development strategy for the 80s and beyond.

(d) An increasing number of developing countries see themselves forced to invest increasing amounts of capital and technology, that could be spent on development, on the acquisition of warships and military equipment for the purpose of surveillance and enforcement.⁵ This issue, bearing directly on Disarmament and Development, must be investigated, and new solutions must be proposed.

(e) The necessary international inputs into national planning for marine areas under national jurisdiction need careful study. New forms of cooperation between subnational, national, regional and global planning, comprising both the governmental and the nongovernmental sector, must be devised.

8. The rational and peaceful development of the resources in areas beyond the limits of national jurisdiction requires institutional restructuring for each sector and between sectors. Fishery organizations, at the regional and global level, have to be restructured and strengthened (a) to assist developing coastal States in the management of their living resources, and (b) to manage the living resources in areas beyond the limits of national jurisdiction. With regard to the mineral resources of the international area, two major interdependent concepts have emerged which bear directly on the shaping of a NIEO and a NIO and may set conceptual and institutional precedents of considerable importance. Even if the Conference on the Law of the Sea, at this stage, should fail to enact these concepts, they are here to stay. In one way or another, the international community will take them up again in the span of the next few years.

(a) The concept of an internationally owned resource, managed by the international community for the benefit of all people, especially of developing countries (the common heritage of mankind) potentially transforms relations between industrialized and developing countries. Existing studies, by the U.N. Secretariat and by private organizations, on the impact of international seabed mining on global production, on prices, distribution, processing, trade, landbased producers, etc., are incomplete and often contradictory. The interests of developing countries (both landbased producers and consumers) in deep seabed mining, as well as the question whether investment, by developing countries, in seabed mining technology could contribute to the advance of internal development, need re-appraisal. New ways to make the participation of developing countries in the management and exploitation of the common heritage of mankind meaningful, realistic, and profitable, must be studied.

(b) International seabed mining is giving rise to new institutional arrangements, including, in one way or another, the establishment of a public, internationally controlled Enterprise system. The present status of the Law of the Sea Conference clearly indicates that much work, and much new thinking, is needed to realize such a system and to make it efficient.⁶ It is also clear that not only the manage-

ment of mineral resources of the area beyond national jurisdiction but also that of the other major uses of the seas require new forms of international cooperation.

Methodology

9. The end result of the project will consist of three components:

(a) a conceptual, policy-oriented paper (30-50 pages), elaborating on the potential contribution of marine resources and ocean management to the Strategy, with particular emphasis on the problems of developing coastal zones under national jurisdiction, of maximizing benefits from the common heritage of mankind, and of establishing a prototype of an international public enterprise system.

(b) This paper should be supported by a number of case studies on different configurations (resources and other characteristics) of maritime areas under national jurisdiction and on alternative strategies to maximize productivity and development. For this component, the project should also draw on, and contribute to, the International Ocean Institute's other major ongoing project, i.e., the Ocean Yearbook.

(c) On the other hand, concrete suggestions should be extracted from the policy paper as a proposal (goals and policies) for inclusion in the final U.N. text on the Strategy.

10. The duration of the project should be two years.

(a) By the end of the first year, an interim policy paper should be completed and a number of case studies should be initiated.

(b) During the first half of the second year the case studies should be completed.

(c) At the end of the second year the interim policy paper should be revised in the light of the results of the case studies, and the recommendations should be extracted.

(d) The whole material should be edited into a full-length book.

11. The project should be initiated in February, 1978, and concluded by the end of 1979, with publication in the spring of 1980.

Budget

12. The grant should be made to the International Ocean Institute, University of Malta, Msida, Malta. The total amount required is U.S.\$ 150,000 over two years. Expenses will be divided about evenly between the two years.

a. Personnel costs

- 2 project directors, for two years, on a half-time basis (20 man months)	\$ 70,000	
- 2 research assistants, for two years, on a half-time basis (20 man months)	14,000	
- secretarial assistance (12 man. months)	<u>12,000</u>	
		96,000

b. Material costs (30%)

- office, telephone, stationery, mailing, telex, telegraph, accountant, misc.	<u>29,000</u>	29,000
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c. Direct project costs

- consultants (case studies)	15,000	
- travel	7,500	
- report production	<u>2,500</u>	<u>25,000</u>
		<u>25,000</u>
	TOTAL	\$ 150,000

\$ 75,000 to be paid upon approval of the project
\$ 50,000 to be paid upon receipt of the interim report
\$ 25,000 to be paid upon receipt of the final report.

Notes

1. Resolution 2626 (XXV International Development Strategy for the Second United Nations Development Decade. Para.(5) of the Preamble states "The success of international development activities will depend in large measure on improvement in the general international situation, particularly on concrete progress towards general and complete disarmament under effective international control....There should, therefore, be a close link between the Second United Nations Development Decade and the Disarmament Decade."

2. Apart from Micronesia, whose huge area has not yet been definitely calculated, the USA, acquiring an Economic Zone of 2,222,000 square nautical miles, is the principal gainer, the next three being Australia (2,043,300 squ.naut.miles), New Zealand (1,409,500 squ.naut.miles) and Canada (1,370,000 squ.naut.miles). 25 States will acquire 76% of the total area of Economic Zones. 13 of these are developed States. Together they will gain 48% of the total area of all Economic Zones; 12 are developing countries who will gain, together, 28% of the total area. About 80 countries will gain nothing. (James Bridgman, Ocean Education Project, "Who gets what Resources in the Informal Composite Negotiating Text?")

3. The study of the economies of developing islands, in the Pacific and in the Caribbean, has barely been initiated. The application of recently defined principles of coastal management and the possibility of shifting emphasis from scarce, exhaustible land resources, or dependence on a metropolis, to the vast, largely untapped and renewable resources of the surrounding sea opens new prospects for development and independence.

4. The world aquaculture production has risen, over the past ten years, from about 2 million to over 6 million tons of aquatic plants, molluscs, crustaceans, and fin fish. It is anticipated that production will multiply tenfold by the year 2000. The potential for the expansion of aquaculture, unlike that of agriculture, is practically unlimited. It is also far less vulnerable to climatic irregularities than is agriculture.

5. The estimated value of the stock of fighting ships in Third World countries -- taken as a whole -- has increased somewhat faster than the world average over the period 1950-76: 7.2% annually against 5.1%. For the period 1970-76, however, the divergence has been much greater, with the naval stock in the Third World growing twice as fast as the world total. To a greater or lesser degree this is a general phenomenon with all the major regions contributing (Ocean Yearbook, Vol.I).

6. See A. Paro and E.M. Borgese, The New International Economic Order and the Law of the Sea, IOI Occasional Papers 4 and 5 (Malta: Malta University Press, 1976).