



April 7, 1986

THE OCEANS: NEW OPPORTUNITIES AND RESPONSIBILITIES

The adoption of the United Nations Convention on
The advent of the Law of the Sea and the expansion of coastal state jurisdiction has presented many nations with a new resource base. Control over this marine area gives coastal states not only the right to exploit their ocean space but also the responsibility to conserve and manage its resources.

Throughout the protracted negotiations at the Law of the Sea Conference, Canada and developing ~~coastal~~ states found common cause on many issues. As a technologically advanced maritime nation committed to the concerns of the developing world, Canada was aware of the challenges and opportunities involved in extending jurisdiction. In order to effectively respond to the new prominence of ocean resource development and management issues, the Canadian government established the International Centre for Ocean Development, a Crown Corporation, within the Canadian development assistance structure to provide advisory and technical assistance to developing ~~coastal~~ states.

MANDATE AND ORGANIZATION

The International Centre for Ocean Development (ICOD) cooperates with and supports developing countries and regions in the development and comprehensive management of their ocean resources with a special emphasis on food production.

ICOD's mandate covers the full range of ocean activities and resources. Specifically, the Centre *is* charged with:

- i) Initiating and supporting programs in developing countries for the improved management and utilization of ocean resources, particularly as a source of food;
- ii) Supporting the development of indigenous expertise and institutions in developing countries to increase the capacity of integrated ocean-use management;
- iii) Enlisting the expertise of people and institutions available in Canada and throughout the developing world;
- iv) Developing and supporting the collection and dissemination of information relevant to ocean resource development;



- v) Development and sponsoring training programs, technical assistance and advisory services relating to ocean resource development; and
- vi) Supporting research in the field of ocean resource development.

As a Crown Corporation, ICOD operates under the policy guidance of a Chairman and a Board of Directors appointed by the Federal Government. The 14 member Board includes four international members, in keeping with the international objectives of the Centre.

Under the executive direction of the President, the Centre has a staff of no more than thirty full-time personnel, allowing for quick and efficient response to requests for assistance.

ICOD PROGRAMS

ICOD funding is dedicated to well-defined, non capital-intensive programs which contribute to national and/or regional marine priorities. By providing this specialized technical and advisory support, the Centre's activities are designed to complement the work of other national and international organizations involved in ocean development. Within Canada, the Centre serves as an institutional link, facilitating access to governmental, industrial, scientific and academic sectors. In keeping with the Centre's mandate, ICOD activities focus primarily on training, technical assistance and information.

Training

marine resource management, national legislation and infrastructure
For *developing countries* ~~coastal states~~ to effectively and independently exploit and manage their ocean resources, they must have trained experts and managers. Accordingly, ICOD designs curricula and delivers comprehensive training programs on matters specifically related to extension of jurisdiction and resource management. The Centre also provides programs ranging from basic, short-term technical training to graduate education, tailored to the specific needs of developing countries or regions.

To complement its training objectives, the Centre has initiated a scholarship program for students from developing countries to study in marine-related disciplines at Canadian universities.

and Regional Cooperation and Development.



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^{and}
The Centre also dedicates scholarships to selected international institutions. Additionally, some scholarships are offered for study in developing countries as an adjunct to ICOD's technical assistance projects.

Technical Assistance

Programs in Technical Assistance are primarily geared to improving the institutional capacities of developing countries or regional organizations to manage ocean resources. In pursuit of this aim, ICOD provides financial and advisory support for activities ranging from the identification of specific projects to full program implementation. Programs are aimed at all levels of resource use and management, from village level extension services and small scale projects to advisory and organizational support for larger fisheries and marine management programs. The Centre also has a special "small projects" fund for short term, community-level development projects.

Information Services

ICOD provides a link through which developing nations can gain access to marine expertise, whether in Canada or elsewhere. The Centre also provides assistance in the collection and dissemination of fisheries or oceans-related information within and between developing nations. Programs in this division are directed toward increasing regional capability to collect and utilize information necessary for development and management of marine resources.

Additionally, ICOD distributes reference sheets, texts and teaching aids for educational activities throughout the developing world.

PROGRAM CRITERIA

ICOD provides support for non capital-intensive projects which contribute to national and regional objectives for the development and management of ocean resources. ICOD accepts for consideration proposals from the governments of developing coastal states or regional intergovernmental agencies which relate directly to the achievement of such objectives. Special emphasis is placed on those proposals which relate to ICOD's



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areas of concentration - training, information services and technical assistance. Normally, research projects are funded only as a support component of broader programs undertaken by the Centre.

proposed
Projects are normally funded jointly with the recipient government or agency and each project is expected to become self-sustaining within an ~~agreed~~ timeframe.

The Centre may fund specific projects which are components of larger programs funded by other agencies or by national governments. In some instances, ICOD may assist in identifying donors for projects which are beyond the scope of the Centre. ICOD also provides its services as an implementing agency to other national, regional or international agencies.

As a component of approved ICOD programs, the Centre may undertake to provide support for workshops, conferences, training programs or other relevant activities.

Parties interested in submitting proposals or requiring further information on the Centre should contact the President at:

International Centre for Ocean Development
5670 Spring Garden Road
9th Floor
Halifax, Nova Scotia
Canada B3J 1H6
(902) 429-6176

The Centre also maintains an Ottawa Bureau at:

255 Argyle Avenue
1st Floor
Ottawa, Ontario
Canada K2P 1B8
(613) 238-1818

THE OCEANS: NEW OPPORTUNITIES AND RESPONSIBILITIES

Today many countries have a new base of ocean resources. More than 80 states, many of which are developing countries, now claim an extended zone of jurisdiction.

1973 -
Following the 1982 United Nations Conference on the Law of the Sea, states have new rights to exploit these marine zones. ~~But~~ they also face new responsibilities to conserve and manage their resources.

At the Law of the Sea Conference, Canada and developing countries were allies on many issues. An advanced nation in marine science and management, Canada is aware of the opportunities presented by extending jurisdiction, but also knows the challenges.* To help developing countries meet the challenges of ocean management, the Canadian government created a new Crown Corporation, the International Centre for Ocean Development, within the Canadian development assistance structure.

* ADD: the responsibilities, and the need for new forms of international cooperation.

MANDATE AND ORGANIZATION

The International Centre for Ocean Development (ICOD) cooperates with and supports developing countries and regions in utilizing and managing their ocean resources through the use of comprehensive and environmentally sound management strategies. The Centre places special emphasis on activities related to food production but its mandate covers the full range of fisheries and ~~ocean~~ activities. Specifically, the Centre will: ^{↑ ocean-related}

- (1) initiate and support programmes in developing countries for improved management and use of ocean resources, particularly for food production;
- (2) help countries develop their own expertise and institutions for integrated ocean-use management;
- (3) enlist the expertise of people and institutions in Canada and in the developing world;
- (4) develop and support the collection and dissemination of information on ocean development;
- (5) develop and sponsor training programmes, technical assistance projects, and advisory services on ocean resource development and management;
- (6) support certain research programmes in ocean resource development.

ICOD operates under the policy guidance of a Board of Directors appointed by the Canadian government. The 14-member Board of Directors includes four international members.

Under the executive direction of the President, the Centre's full-time staff is limited to 30 people, allowing for quick and efficient response to requests.

ICOD PROGRAMMES

To strengthen ocean management in developing countries, ICOD stresses expertise rather than capital spending. Funding is given to well-defined programmes in training, technical assistance, and information, that fit the developing nation's or region's own priorities.

The Centre's technical and advisory support complements the work of other national and international organizations on ocean development.

ICOD provides a link for developing countries to the skills and knowledge in Canada's universities, government, and private industry.

Training

In order to manage their ocean resources, developing countries need trained people. ICOD designs and delivers training programmes related to extension of jurisdiction and to fisheries and ocean management. ICOD tailors its training programmes to the specific needs of recipient countries.

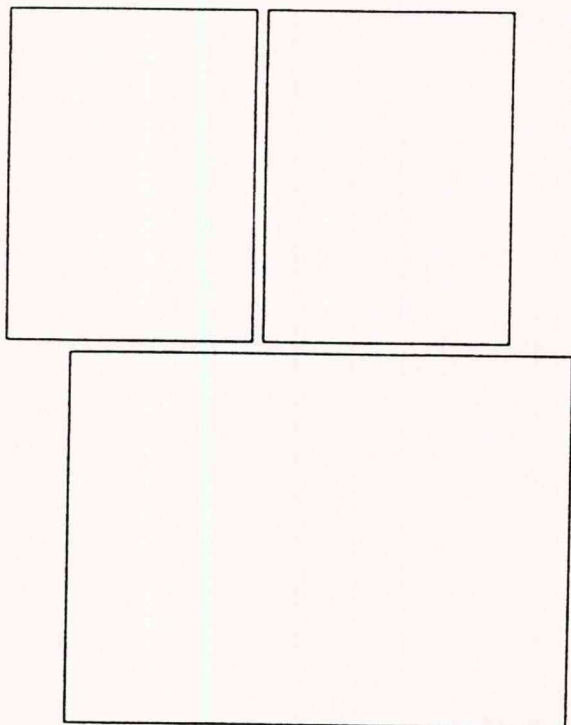
Programmes range from basic, short-term technical training to graduate education. Training takes place both in Canada and within developing countries and regions.

Besides operating its own training programmes* ICOD provides scholarships for study in marine-related disciplines at Canadian and selected international institutions.

In addition, some scholarships for study within developing countries are offered as an adjunct to ICOD's technical assistance projects.

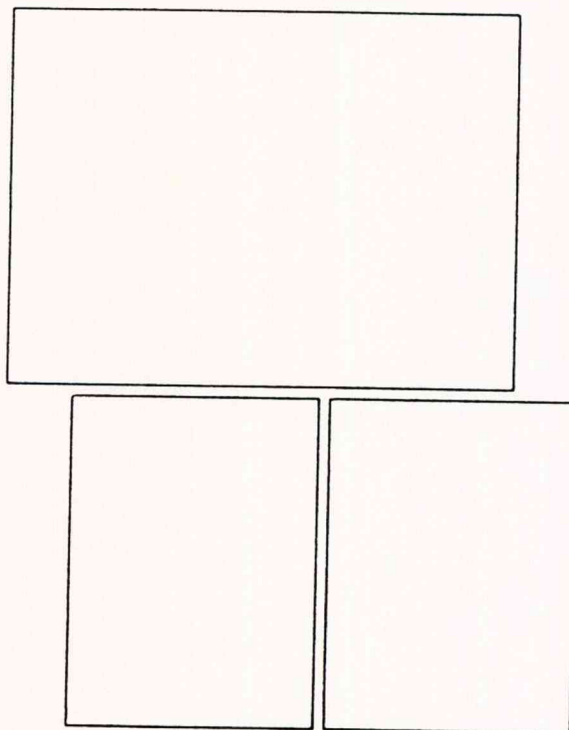
* Add: and cooperation in other training efforts,

International Centre for Ocean Development
Centre international d'exploitation des océans
Canada



*The Oceans:
New Opportunities
and Responsibilities*

*Les océans:
nouveaux débouchés et
nouvelles responsabilités*



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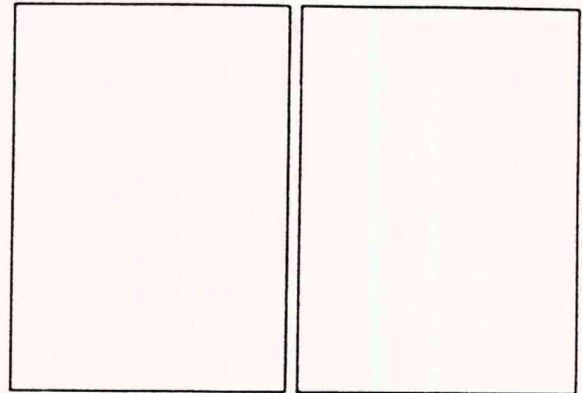
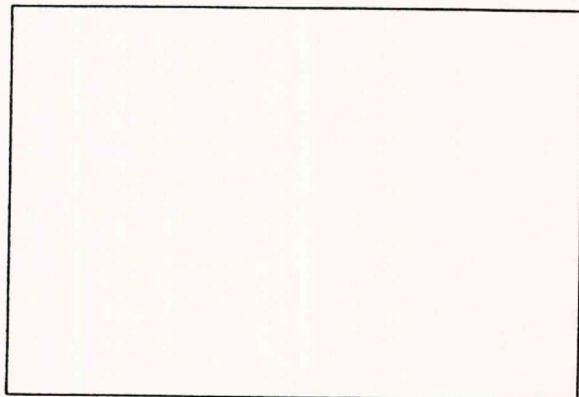


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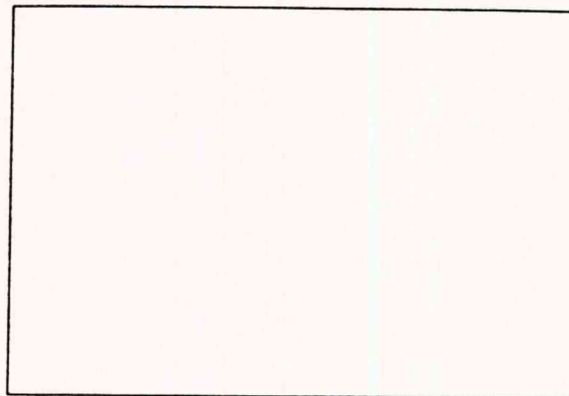


The Oceans: New Opportunities and Responsibilities

Today many countries have a new base of ocean resources. More than 80 states, many of which are developing countries, now claim an extended zone of jurisdiction.

Following the 1973-1982 United Nations Conference on the Law of the Sea, states have new rights to exploit these marine zones. But they also face new responsibilities to conserve and manage their resources.

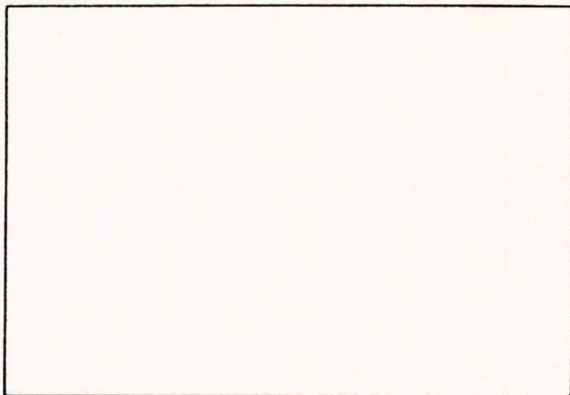
At the Law of the Sea Conference, Canada and developing countries were allies on many issues. An advanced nation in marine science and management, Canada is aware of the opportunities presented by extending jurisdiction, but also knows the challenges, responsibilities, and the need for new forms of international cooperation. To help developing countries meet the challenges of ocean management, the Canadian government created a new Crown Corporation, the International Centre for Ocean Development, within the Canadian development assistance structure.



Mandate and Organization

The International Centre for Ocean Development (ICOD) cooperates with and supports developing countries and regions in utilizing and managing their ocean resources through the use of comprehensive and environmentally sound management strategies. The Centre places special emphasis on activities related to food production but its mandate covers the full range of fisheries and other ocean-related activities. Specifically, the Centre will:

1. initiate and support programmes in developing countries for improved management and use of ocean resources, particularly for food production;
2. help countries develop their own expertise and institutions for integrated ocean-use management;
3. enlist the expertise of people and institutions in Canada and in the developing world;
4. develop and support the collection and dissemination of information on ocean development;
5. develop and sponsor training programmes, technical assistance projects, and advisory services on ocean resource development and management;
6. support certain research programmes in ocean resource development.



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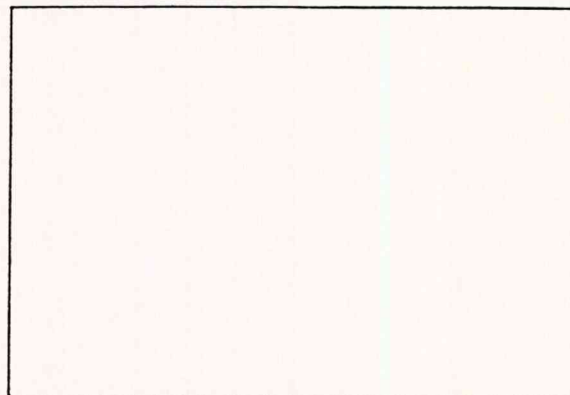
Under the executive direction of the President, the Centre's full-time staff is limited to 30 people, allowing for quick and efficient response to requests.

ICOD Programmes

To strengthen ocean management in developing countries, ICOD stresses expertise rather than capital spending. Funding is given to well-defined programmes in training, technical assistance, and information, that fit the developing nation's or region's own priorities.

The Centre's technical and advisory support complements the work of other national and international organizations on ocean development.

ICOD provides a link for developing countries to the skills and knowledge in Canada's universities, government, and private industry.



Training

In order to manage their ocean resources, developing countries need trained people. ICOD designs and delivers training programmes related to extension of jurisdiction and to fisheries and ocean management. ICOD tailors its training programmes to the specific needs of recipient countries.

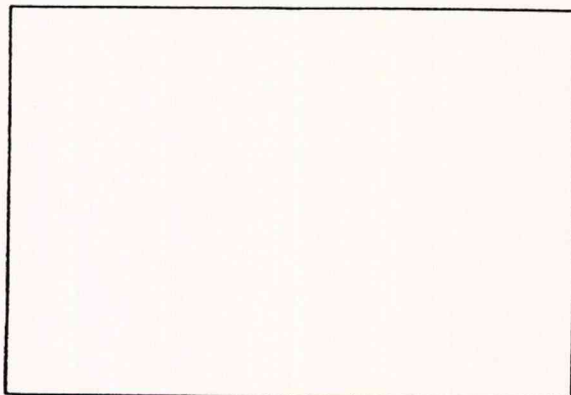
Programmes range from basic, short-term technical training to graduate education. Training takes place both in Canada and within developing countries and regions.

Besides operating its own training programmes, and cooperating in other training efforts, ICOD provides scholarships for study in marine-related disciplines at Canadian and selected international institutions.

In addition, some scholarships for study within developing countries are offered as an adjunct to ICOD's technical assistance projects.

Technical Assistance

In its technical assistance programmes, ICOD aims primarily to create or strengthen the institutions in the developing world that will provide effective ocean management.



The Centre provides financial and advisory support for national or regional programmes which are directed at all levels of resource use and management, from village-level extension services and small-scale projects to larger fisheries and marine management programmes. Activities range from the identification of specific projects to their full implementation.

ICOD also has a special "small projects" fund for short-term development projects at the community level.

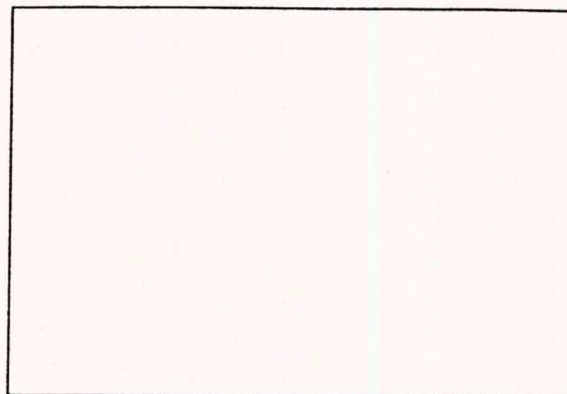
Information Services

ICOD helps developing countries and regions to develop and manage marine information as a tool for managing marine resources.

The Centre helps developing countries establish systems to obtain, store and disseminate marine information:

- by linking developing countries to marine data and expertise in Canada and elsewhere; and
- by assisting the collection and dissemination of information within and between developing nations.

In addition, ICOD produces and distributes reference sheets, texts, and teaching aids for educational work in the developing world.



Programme Criteria

ICOD provides support for non-capital-intensive projects that contribute to national and regional objectives for the development and management of ocean resources.

Special emphasis is placed on proposals relating to training, information services, and technical assistance.

ICOD accepts for consideration proposals from the governments of developing states or regional intergovernmental agencies.

ICOD normally funds programmes jointly with the recipient government or agency, and each project is expected to become self-sustaining within a projected timeframe.

The Centre may fund specific projects which are components of larger programmes funded by other agencies or by national governments.

The Centre may support workshops, conferences, training programmes, or other activities as a component of approved ICOD programmes.

Research projects are normally funded only as a support component of broader programmes undertaken by the Centre.

In some instances, ICOD may assist in identifying donors for projects that are beyond the scope of the Centre.

ICOD also provides its services to carry out projects for other national, regional, or international agencies.

Parties seeking further information should direct enquiries to:

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Telephone: (613) 954-1920

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Suite 404,
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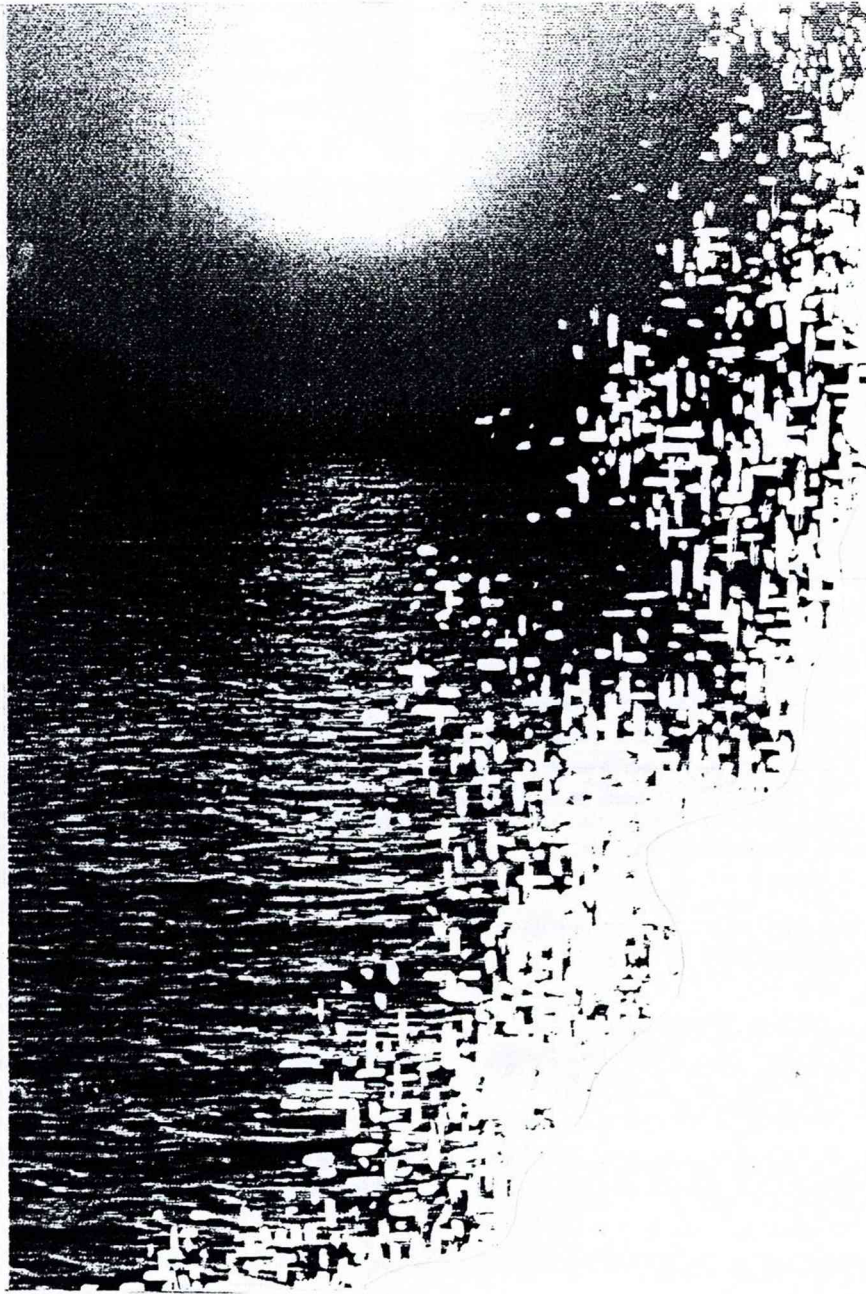
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I G O D



*Building
Partnerships
in Ocean
Development*



Canada

International Centre
for Ocean Development

Mandate

ICOD's mandate is to initiate, encourage, and support cooperation between Canada and developing countries in the field of ocean resource development.

Specifically, this includes:

1. initiating and supporting programs in developing countries for improved management and use of ocean resources, particularly as a source of food;
2. supporting developing countries to establish their own expertise and institutions for integrated ocean-use management;
3. enlisting the expertise of people and institutions in Canada and in the developing world;
4. developing and sponsoring the collection and dissemination of information on ocean development;
5. developing and sponsoring training programs, technical assistance projects, and advisory services on ocean resource development and management; and
6. supporting research relating to ocean resource development.



From an address by the Rt. Hon. Lester B. Pearson to the "Conference on International Development" held at Columbia University, Palisades, New York, on February 20, 1970:

"For any beginning, we must see the planet as we now know it really to be: totally dependent on its shared biosphere ... ; bound together in a way that the carelessness of each can corrupt all; one and indivisible, the only home in infinity of that single species, Homo sapiens. It is only within this framework that all concepts of cooperation, partnership, and mutual support find validity. It is within the planetary country named 'Earth' that the rich and developed minority can become aware of the degree to which they engross the world's resources and also the degree to which their control of the major means of consumption and production can inhibit the development of other lands.

"But if the destiny of this century, as it moves to its end, is to balance the effort and genius that led to the discovery of physical and ecological unity with an equal effort to promote social and moral solidarity, then the reforms such as we propose in our report - altered and improved where desirable - can be seen not so much as intergovernmental arrangements as a modest step toward the building of the human community which now seems so remote but is so necessary for its very survival, as a move toward a better planetary balance, more justice, more sharing, more generosity, more real partnership for mankind."

I C O D T O D A Y

"Helping developing countries to use and manage their ocean resources in a rational and sustainable manner is the essence of ICOD's work."

The International Centre for Ocean Development (ICOD) was established in 1985 to foster cooperation between Canada and developing countries in ocean resource management. It is the first international donor agency to focus exclusively in the ocean sector.

ICOD's approach to development assistance is in harmony with four basic tenets expressed in Canada's Official Development Assistance Charter: "Putting Poverty First; Helping People Help Themselves; Development Priorities Must Prevail; and Partnership is the Key."

In its first five years, ICOD supported 220 projects involving commitments of \$31 million. These projects, identified by coastal nations to address specific needs, often involved Canadian ocean experts sharing knowledge and experience with their counterparts in the developing world.

Many initiatives that began as experimental or innovative projects are now well-established. Cooperative ventures between ICOD and several regional organizations and institutions involved in ocean management have led to en-

during partnerships. The successful completion of these early initiatives suggests further areas where cooperation could be extended and new partnerships established.



Anticipating growing commitments, ICOD has reorganized its corporate structure to continue responding effectively and to maintain the personal approach that has encouraged cooperation in the past. This booklet describes ICOD's evolving role in working with its partners to meet the challenge of ocean management - developing the potential of ocean resources to serve the needs of both present and future generations.

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Integrated Ocean Management and Development

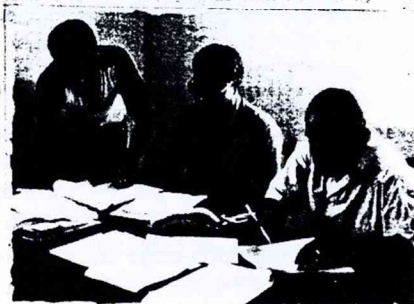
"Sustainable development, if not survival itself, depends on significant advances in the management of the oceans."

*Our Common Future
World Commission on
Environment and Development*

The LOS Convention is the most advanced instrument available for development on marine related issues. It views ocean resources management from an integrated physical, biological, legal, and socioeconomic approach. For coastal nations, international cooperation in ocean management adds a new dimension to the strategy of growth at the national, regional and international levels. It can provide a turning point for less developed economies to become more self-reliant and geared to diversification and internal development. To this end, developing countries need a legislative and institutional infrastructure, trained personnel, improved technology, reliable information and an integrated approach to embrace the benefits and responsibilities of ocean management.

ICOD's program to date comprises a wide variety of projects: a personal computer program library for the delimitation of maritime boundaries; a graduate program in Marine Affairs at Dalhousie University in Halifax; modules in Maritime Law and Marine Affairs at the World Maritime University; and the Pacific Islands Marine Resources Information System (PIMRIS).

The Challenge: The ocean resources available to developing countries within their 200 mile exclusive economic zones (EEZs) are potential sources of food and increased national wealth. Since the signing of UNCLOS III, many countries have claimed EEZs to exploit their marine resources. This extended jurisdiction offers the potential for new ocean resource wealth but also entails the responsibility for ocean resource management. To balance conflicting concerns such as food security, economic development, marine pollution, the contribution of the oceans to ecological balance, and development for the future, ocean states must become effective ocean managers.



The exploitation of fish for food, for example, and the prudent stewardship of fisheries stocks are pressing issues for many developing states. A sustainable harvest of the resource usually requires regular data collection and scientific advice on allowable catch rates. Spoilage in the artisanal fishery is a costly problem, and in many instances post-harvest processing and marketing requires upgrading. A major effort is needed to



develop a suitable information base and a critical mass of trained staff. Adequate surveillance, as well, demands training and infrastructure.

Developing nations are requesting assistance to mount integrated approaches to the management and exploitation of fish and other resources in their EEZs. The complexities of negotiating maritime boundaries, access agreements, and quotas require expertise that most developing countries do not have. The exploitation of offshore minerals calls for special training, access to advanced technology, and negotiation of joint ventures with

industrialized countries. The development of human resources to tackle these challenges is therefore a priority.

Many countries with jurisdiction over coastal zones are among the world's least developed nations. They need assistance to realize the potential gains offered by managing their ocean resources and to control overexploitation by others.

The Response: Canada and many developing countries found common cause in the protracted negotiations leading to the adoption of UNCLOS III in 1982. With no distant water fishing interests, Canada was able to forge links with developing countries that shared an interest in acquiring the benefits that might accrue from establishing EEZs.

Marine Environmental Conservation

"We have noticed the deterioration of coral reefs, decrease in fisheries stocks, an increase in fish kills and more frequent algal blooms directly associated with pollution."

*Dr. Euna Moore, Director
Centre for Resource Management
and Environmental Studies (CERMES)
University of the West Indies.*

The oceans play a crucial role in maintaining the equilibrium of earth's life support systems.

Global warming, sea level rise, and marine pollution represent potentially devastating threats to the survival of the earth. Developing coastal nations and regions lack trained personnel to play their part in the cooperative effort that will be needed to preserve the oceans from environmental disaster.

Monitoring programs, resource conservation, and pollution planning on a regional level are required both to prevent local disasters and to make a regional contribution to the global efforts in environmental conservation.

At CERMES, ICOD is assisting in the development of a Masters degree program in marine resource and environmental management.

As early as 1981, at the meeting of Commonwealth First Ministers in Australia, Prime Minister Pierre Trudeau announced Canada's intent to create an International Centre for Ocean Development. ICOD was founded shortly after UNCTAD III to make Canadian marine experience and expertise more available to developing nations.

ICOD's programs are designed to have a significant impact on the evolution of the economies and ocean management of coastal states, particularly small island states where the ocean is the major environmental influence and a source of economic potential. The experience of the first five years adds credence to the view that this potential can be realized.

Since 1985, ICOD has concentrated on the development of human resources, management capacity, and other forms of institution building that do not require large amounts of capital expenditure. By carefully selecting its geographical and sectoral targets, ICOD has contributed assistance programs in most major sectors of ocean resource management.

In the 1990's, clearly focussed programs related to the most critical areas of concern to developing ocean states will continue to form the nucleus of ICOD's strategic planning. Linkages with other donors will also be important to enable ICOD to contribute to development assistance policy in the oceans sector, to foster an integrated and sustainable ocean management approach, and to enable developing ocean states to become more equal partners in the management and development of the world's oceans.

O R G A N I Z A T I O N

ICOD's 14-member Board of Directors is comprised of eight Canadian and four international members. The directors are selected for their experience in the fields of ocean resource development and international development.

ICOD's program-related operations are organized into three divisions: the South Pacific and Caribbean Basin Division; the West Africa and Indian Ocean Division; and the Inter-regional and Cooperative Activities Division (IRCAD).

The two regional divisions reflect the focus of ICOD's development assistance on selected groupings of countries. All are coastal and island states where ocean resources play a major role in development priorities and where ICOD assistance can make a significant contribution. IRCAD deals with broader, trans-sectoral activities such as scholarships, training courses, and the publication of training materials that have application in the target regions and beyond.

ICOD's divisional structure encourages the continuity of programs in technical assistance, training and information management. Expertise in all aspects of ocean-related management is provided by a select group of sectoral consultants based in Canada and in developing nations and employed as circumstances merit.

Field offices are established in target regions according to program demands. The Canadian Cooperation Office in Suva, Fiji, ICOD's first regional office, supports the Centre's South Pacific activities and that of the Canada South Pacific Ocean Development Program which ICOD manages



on behalf of the Canadian International Development Agency (CIDA). The office also serves as a coordination and access point for other Canadian development assistance activities in the South Pacific region.

P H I L O S O P H Y A N D

Coastal Development and Management

"Maps have a catalytic effect on development and prevent the main source of haphazard planning which is the lack of easily understood information. In relation to the development and exploitation of marine resources, a mapping program can address critical information needs concerning fisheries, oceanography, geology, navigation, coastal development and local political realities."

*Marine Resources Mapping:
an introductory manual*

FAO Fisheries Technical Paper 274.

Increasing urbanization; degradation of reefs and shorelines; conflicting priorities of heavy industry, tourism and village communities; the need, especially in the tropics, to guard against natural disasters such as cyclones and tsunamis - all these indicate strong requirements for rational planning related to the shorelines of coastal states if maximum benefits are to be realized.

Demands for assistance have included the development of baseline data for lagoonal health protection, coastal environmental monitoring, a regional mapping system, workshops to determine priorities for coastal protection and conservation, and production of educational kits on coastal zone protection for the general public.



ICOD's programs are part of Canada's Official Development Assistance commitment. They flow from the organization's mandate and the needs expressed by developing countries in ocean resource development and management.

ICOD's philosophical approach is to foster and support initiatives that help developing countries to improve their management and utilization of ocean resources in a rational and sustainable manner.

Underlying this overall approach is the premise that sound management and development of the oceans depends on regional and international cooperation, concerted action to preserve and protect marine environments, and strategies based on all relevant scientific, social, and economic factors. Equally crucial are the development of trained human resources and the introduction of environmentally sound, socially relevant technologies to assist developing countries to manage their exclusive economic zones.

To meet its objectives, ICOD has pledged to respond quickly and efficiently to the needs identified as priori-

O P E R A T I N G S T R A T E G I E S

ties by developing countries and regional organizations. In addition, the Centre has adopted the following strategies to guide its program development:

Geographical Focus

ICOD focuses on small island and coastal countries and regions where ocean resources can have the maximum development impact and where the Centre's limited funds can yield the largest national or regional benefits. Presently, the Centre is active in four regions: the Caribbean Basin, South Pacific, South and West Indian Ocean, and West Africa. Projects of an inter-regional or global nature are also undertaken where warranted.

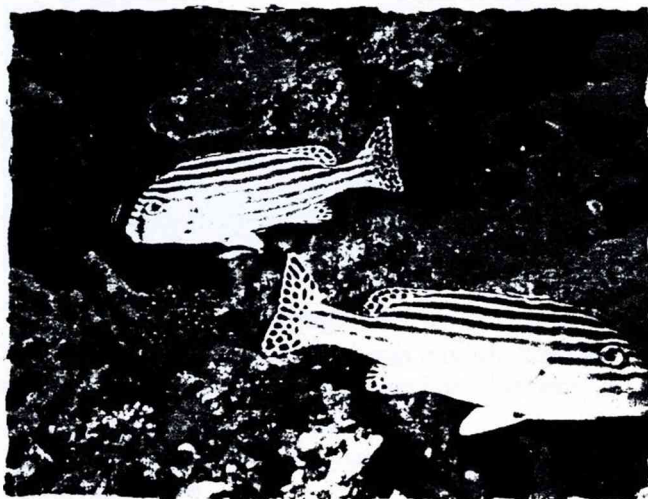
Scope

ICOD's mandate encompasses all aspects of ocean resource development and management. Programs build on specific areas of sectoral expertise in developing countries or regions. The program and projects of ICOD have been grouped under seven broad sectoral themes:

- 1) integrated ocean management and development;
- 2) fisheries management and development;
- 3) mariculture;
- 4) coastal development and management;
- 5) non-living resource management and development;
- 6) marine transportation and ports management; and
- 7) marine environmental conservation.

Human Resources Development

ICOD concentrates on the development of human resources and management capacity in developing countries. In responding to requests, the Centre gives particular consideration to the role of women in development where possible.



South-South Exchanges

ICOD encourages the exchange of technology, information, and expertise on a south-south basis between countries and organizations. In this manner, existing capacities in one part of the developing world are made accessible to other parts.

Inter-agency Cooperation

ICOD coordinates its activities with Canadian and other donor agencies to avoid duplication of effort and to ensure that programs are complementary. Where possible, ICOD will help developing countries and regions to work with other major donors. This may involve ICOD as an implementing agency, a partner involved in joint funding, or a facilitator linking donors and aid recipients.

Mariculture

"In 1986 (maricultural) production from farming increased by 21% over that of 1985 to reach a total of 800,000 tonnes. It is estimated that the production of cultured shrimp will alone reach 800,000 tons by the year 2000."

Dr. Li Si-Fa

Shanghai Fisheries University

In some areas mariculture can complement traditional fishing. However, the long term socioeconomic effects must be known and sound research performed before such farming operations can begin. Pilot studies can help avoid costly mistakes at the production phase.

Requests for ICOD assistance have centered around training in mariculture management and the economic feasibility of marketing products that have shown potential from pilot research operations.

Project Criteria

Project proposals to ICOD must normally be submitted or endorsed by government bodies or regional intergovernmental organizations. This ensures that projects have the full support of local authorities, contribute to national and regional marine priorities and objectives, and will be continued if applicable by the developing countries themselves once ICOD's support is completed.

Proposals are approved internally at the presidential level or by the Board of Directors. An agreement is then signed between ICOD and the development partner or executing agency to launch the project. The Centre also regularly undertakes evaluation of projects.

Project Execution

Canadian consultants, as well as those from the developing country or region itself may be hired to plan, implement, and evaluate approved ICOD projects. These firms and individuals are selected by ICOD in close consultation with its ocean development partners on the basis of experience, availability, and suitability.

P R O G R A M T H E M E S

Since 1985, developing nations have outlined diverse ocean-related priorities that require attention. Based on these requests, ICOD has elaborated a thematic approach to guide its program organization and design. These themes and the projects within them encompass the components for building an integrated approach to ocean management and development.

ICOD uses the themes to give context to ongoing projects and applications. Likewise, ICOD's partners within the target regions are encouraged to use the themes as a planning tool in establishing priorities, identifying relationships between projects and programs and efficiencies, and ensuring program progress and continuity. Incorporated in all program themes are the concepts of environmental protection and sustainability.

Integrated Ocean Management

Ocean policy and planning, economics, economic research and systems, financing, maritime law, and national legislation.

Fisheries Management and Development

Fisheries operations, fishing techniques and equipment, surveillance, research on stocks, economic and policy analysis, and post-harvest techniques and methods.

Mariculture

Fish culture and mariculture management, techniques, and equipment.



Coastal Development and Management

Landscape protection, erosion control, tourism, marine parks and protected areas, and coral reef development.

Non-Living Resource Management

Minerals and energy, and the exploitation of these resources.

Maritime Transportation and Ports

Transportation infrastructure, vessels, marine equipment, and safety at sea.

Marine Environmental Conservation

All aspects of the marine environment, resource conservation, marine pollution and its control, and global pollution impacts.

Non-living Resource Management

"Our common goal is to outline a sound plan to exploit offshore mineral wealth. A carefully managed effort will safeguard the ocean environment and ensure future wealth."

Jioji Kotobalavu, Director, Committee for the Coordination of Joint Prospecting for Mineral Resources in the South Pacific Offshore Areas (CCOP/SOPAC)

Very little is known of the ocean mineral resources in the newly established EEZs of developing coastal states. Developing the potential wealth of the seabed presents a challenge to these countries, one that can begin with exploration of minerals from the nearshore at much less cost than offshore exploration for hydrocarbons or minerals. However, removal of items such as beach sand and coral can destroy the very beaches and reefs that attract tourists and generate much needed foreign exchange.

Foreign interests are active in deep seabed mining in a number of areas. Developing coastal states are therefore under some pressure to define their management and regulatory policies as well as to have the trained personnel to ensure some fair return for exploration rights.

Beginning in 1986, ICOD designed a preliminary workshop on exploitation of non-fuel minerals to train trainers. Using persons trained on this course, a successful workshop was held in Fiji in 1989 and two others are planned for the South and West Indian Ocean and West Africa in the early 'nineties. Training of professional marine geologists and assessing environmental impacts of nearshore mineral removal are also underway.

ICOD concentrates its assistance on developing coastal nations countries within four geographical regions and manages some programs with broader application. This focus is reflected in its three corporate divisions: The South Pacific and Caribbean Basin Division; the West African and Indian Ocean Division; and the Interregional and Co-operative Activities Division (IRCAD).

Caribbean Basin

Primary focus: The Commonwealth countries of Grenada, St. Vincent and the Grenadines, Saint Lucia, Dominica, Antigua and Barbuda, St. Kitts and Nevis, Barbados, Jamaica, Guyana, and Belize; the Dominican Republic; and the Central American States of Costa Rica and Nicaragua.

The combined countries have a population of 12 million and occupy 35,000 sq km of territory in an ocean area covering 2.3 million sq km.

ICOD's contributions in the Caribbean Basin Region have been achieved through cooperation with national, subregional, and regional institutions involved in ocean development.

Programs that commenced with the Organisation of Eastern Caribbean States have now expanded to include many regional bodies in the Caribbean Basin such as the University of the West Indies, CARICOM, and the Caribbean Environmental Health Institute. Although the initial emphasis was on fisheries management and development issues, more requests now relate to con-

servation of the marine environment, coastal zone protection (particularly in relation to natural disasters), and integrated ocean management. ICOD will continue to pursue programs that collaborate with and strengthen regional organizations in the Caribbean Basin.

(say more about the new CIDA project and potential regional office as details become available.)

South Pacific

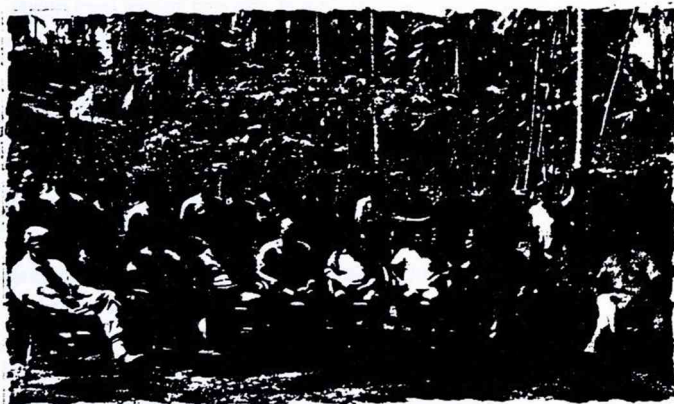
Primary focus: Cook Islands, Fiji, Kiribati, Niue, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, Vanuatu, and Western Samoa.

The combined land mass of these countries is about half the size of the Canadian province of Ontario (...sq km); their combined EEZs, however, are about three times the area of all of Canada (...sq km). With a population that is one sixth as large as Canada's, and few trained personnel, ocean management in this region is a daunting challenge.

Working mainly through the well-established regional agencies such as the South Pacific Forum Fisheries Agency, ICOD has established a strong professional relationship with decision makers in the region. The result has been a series of projects that reflect the region's development needs in the marine sector.

Initially, most requests for assistance were in fisheries management and development. Monitoring, control, and surveillance and fisheries extension-

dominated, with processing and marketing, information, and research in supporting roles. Current requests indicate that the non-living resource management and integrated ocean management programs will increase in importance, but



fisheries management will maintain a dominant role for the medium term. The region's needs for trained human resources, particularly in environmental conservation, are being assessed to assist in planning new programs over the next five years.

In 1989, ICOD became the executing agency for the Canada South Pacific Ocean Development Program, a \$10 million CIDA-funded initiative over five years. The infusion of CIDA funding, directed largely at regional organizations, will allow ICOD to consider more projects at a bilateral level. This individualized assistance will address the different levels of ocean development between the countries of the region and open the way for wider regional participation.

Marine Transportation and Ports

"It is now recognized that it is an essential starting point to have at least a substantial nucleus of able and trained local people available before a country can have a genuine independence and freedom of action in the shipping field"

*IMO Secretariat statement at the XIV Pacem in Maribus Conference
Halifax, Canada, 1988*

Much of the trading between developing countries and others takes place through ports since shipping is still the most convenient method of commerce for developing countries.

Ports are therefore crucial for the economical shipping and receipt of goods. Trained people are needed to run the ports and to administer the marine transportation enterprise. ICOD's program in this area is small at present. The next five years should see a substantial increase in activity as countries become more aware of this program and its scope.

South and West Indian Ocean

Primary Focus: The island states of Comoros, Madagascar, Maldives, Mauritius, Seychelles, and Sri Lanka, as well as East African coastal states of Djibouti, Kenya, Mozambique, Somalia, and Tanzania.

Countries in this region are distributed over a vast ocean territory. In contrast to the South Pacific, coastal nations have wide cultural, ethnic, and social differences, and few organizations serving the region have yet been established. Similarly, effective thematic program development requires greater efforts and a longer lead time than in many other regions.

Initially, ICOD concentrated on developing human resources. Training was offered both in Canada and in the region through regional seminars and workshops. Bilateral cooperation was initiated with the island states of Seychelles, Mauritius, Sri Lanka, and the Maldives. Promising starts have been made in fisheries projects and in the study on reef pollution. Attention has focused on fisheries management and development issues, environmental conservation, and coastal development but requests for assistance related to non-living resources are increasing.

ICOD will explore the options for regional cooperation and encourage sub-regional activities where common interests are more evident. There is at present an emerging awareness of the

benefits in regulating the tuna fishery. Bilateral projects and technical transfer, particularly on a south-south basis, will be supported as well as community-based organizations and women's groups.

West Africa

Primary focus: The island states of Cap Verde and Sao Tome and Principe, and the coastal states of Benin, Cameroon, Congo, Guinea, Guinea-Bissau, Ivory Coast, Mauritania, Morocco, and Senegal.

West Africa represents the most concentrated grouping of francophone and least developed countries among the four regions eligible for ICOD assistance. Some of these countries have economies that, to varying degrees, have been subject to structural adjustment by the International Monetary Fund and the World Bank. Economic issues, cultural diversity, and the fact that few regional organizations exist have posed a considerable challenge to ICOD in establishing sound programming approaches.

Some of the most productive fisheries in the world are found in this region, particularly in the northwestern area. Regional bodies such as those in the South Pacific do not exist in West Africa at present. Thus, ICOD's preferred method of operation has been supplanted by a more bilateral approach with a concentration on the fisheries management and development program. Projects are being developed in most program theme areas, but much remains to be done before a fully integrated approach is realized.

The current emphasis on fisheries programs will continue in the 1990's, and fisheries management is likely to focus on institution building, mostly related to small scale fisheries. Fisheries development efforts will concentrate on the artisanal fishery, with particular emphasis on the crucial role of women in this sector. Other activities will likely include ports and marine transportation, as well as programs to develop an integrated ocean management capacity.

Inter-regional and Cooperative Activities Division

IRCAD plans and implements projects of an inter-regional or global nature, particularly in the area of training and the administration of scholarships. A major objective is to promote greater cooperation and to build partnership linkages between Canadian and counterpart institutions in developing countries, thereby strengthening the ability of ICOD's clients to develop their own expertise.

IRCAD manages global activities such as the Marine Affairs and World Maritime University courses. It is also responsible for developing pilot projects that foster institution building, contribute to curriculum development and the preparation of educational materials, and further ICOD's strategy on Women in Development.



Fisheries Management and Development

"The Nauru management group for common stocks has succeeded in obtaining a regional register of foreign fishing vessels and in defining terms for common access. This indicates to us that the key to success in fisheries management in the South Pacific is regional cooperation."

*D.A.P. Muller, Director
Forum Fisheries Agency
Honiara, Solomon Islands*

For developing island and coastal states, obtaining fish from the sea is of vital importance. Since 1950, world fisheries catches have increased from 20 to 90 million tonnes, with the developing countries increasing their share from 25 to 55%. Although fish represent only 2% of world food production, it provides up to 90% of protein intake for some developing countries. A major problem is that up to 30% of landings spoil before they can be processed or marketed. Also, a considerable proportion that could be used for human consumption is diverted to animal feed. Much remains to be done to improve the management of the fisheries resource.

ICOD has responded to the priorities for fisheries assistance with a program in fisheries management and development that has consumed a large part of its budget in the first five years. From major policy setting at the regional level to small scale assistance to rural fishing groups, the program has attempted to address those food security issues of most urgent need to target countries and regions. ICOD, in its brokerage function, also assigns top priority to food security issues.

Over its first five years, ICOD has identified program themes and patterns of ocean development. These guidelines, however, must be adapted to the highly specific development needs of each of the four regions where ICOD is active.

Fisheries management, for example, has been a priority in all regions to address such issues as food security and foreign exploitation. As the benefits of fisheries management programs are realized in the South Pacific and the Caribbean, more attention can be turned to vital environmental concerns. The experience gathered to date in these regions can be used to encourage similar approaches in the South and West Indian Ocean and West Africa, where more regional cooperation is now emerging.

In the Caribbean Basin and the South Pacific, two new CIDA-funded, ICOD-managed programs will create a wave of innovative projects. The CIDA-CARICOM marine resource assessment program in the Caribbean will involve extensive consultations with CARICOM, OECS, and fisheries authorities throughout the region to identify ways to strengthen regional fisheries management. In the South Pacific, the CIDA-sponsored Canada-South Pacific Ocean Development Project is already underway. Acting as project manager, ICOD is coordinating a series of cooperative ventures with six regional ocean management agencies.

In the South and West Indian Ocean, coastal nations are working with ICOD to promote the regional management and development of tuna stocks. Other

projects, such as support for the Issue Based Indian Ocean Network, will help to engender public awareness for marine conservation across the region. West African programs will also show strong growth over the next five years as individual states and regional institutions build on successful programs in fisheries stock assessment, improvements in fish smoking technology, and training in non-fuels mineral assessment.

In a global context, more scholarships will be offered to students from developing countries for studies leading to a Masters degree at the World Maritime University. This program will be complemented by scholarships for Masters-level study at Canadian institutions. More emphasis on the role of women in development will provide scholarship support for women from developing nations to attend a one-year program at the International Maritime Law Institute in Malta.

In response to the growth and diversification of its program base, ICOD will continue to build a strong resource of consultants from both Canada and the developing world in each of its seven theme areas. This expertise will allow ICOD to better assess its ongoing programs and evaluate new ones; it will also encourage projects that encompass several project themes and strengthen integrated approaches to ocean management and development.

Through its specialized focus, ICOD looks forward to the opportunity of playing a greater role in international ocean affairs and policy formulation. Donor organizations are now beginning to place more

emphasis on the oceans and the environment in their activities. Within the limits of its mandate, ICOD seeks to strengthen its ties with other agencies, to cooperate with other donors, and to expand its roles as an implementing agency, a partner involved in joint funding, and a facilitator linking donors and recipients.

The 1990's have ushered in a widespread view that economic growth must be based on sustainable development principles coupled with a deeper appreciation of the crucial role of the oceans in maintaining the equilibrium of our planet's life support systems. New technology such as satellite imagery dramatically underscores the unity of the oceans and confirms that management of its resources cannot be accomplished in isolation. A truly cooperative effort is needed to maintain the bounty of the oceans for future generations.



Corporate Publications:

In addition to this corporate profile, ICOD produces an annual report and a newsletter, *ICOD Info*. Persons seeking these publications or further information on ICOD policies and procedures may contact the following:

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Our Common Heritage

Satellite instruments circling the earth can now sample an area of ocean in two minutes that would take a modern research vessel more than 11 years to cover.

Ocean productivity plays a key role in global change and systematic measurements of ocean colour from space will provide the data to predict global change with more certainty. Future satellite technology will be supporting large-scale international programs such as the Tropical Ocean Global Atmosphere Program and the International Geosphere-Biosphere Program. Developing countries, through international agencies, bilateral cooperation, and their own institutions are participating in these programs. The next decade will provide developing countries with masses of ocean data that can be used to manage their ocean space with more confidence.





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