THE CANADIAN REPORT

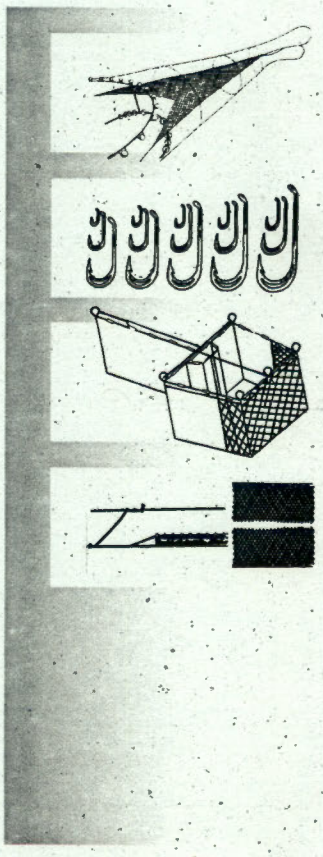
Of the 1994

International Expert

Consultation for the

Code of Conduct for

Responsible Fishing



Fisheries and Oceans
Pêches et Océans

Canada

THE CANADIAN REPORT

Of the 1994 *International Expert Consultation for the Code of Conduct for Responsible Fishing*

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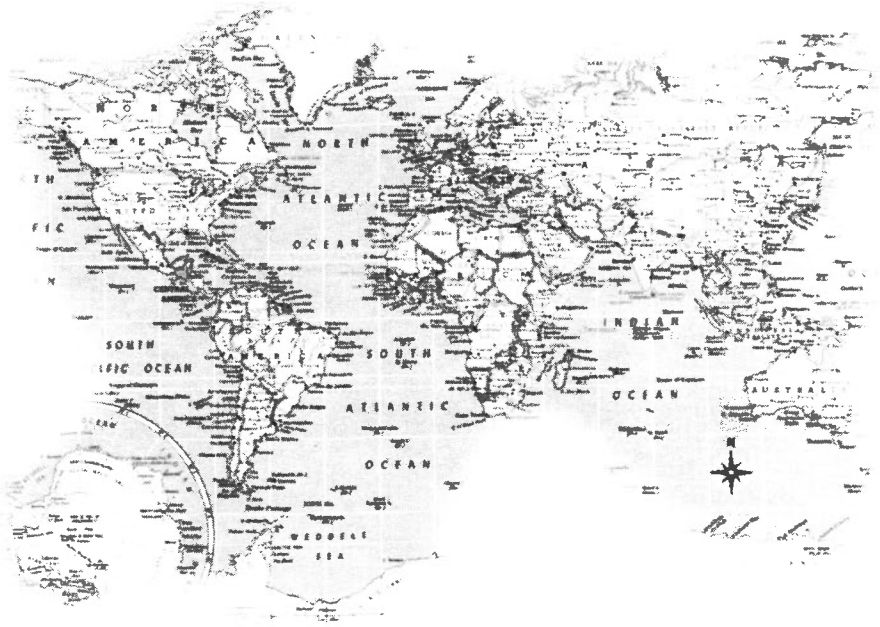

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June 6 - 11, 1994

Sidney, British Columbia

FISHING INDUSTRY SERVICES

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BACKGROUND

"World marine fisheries production has increased almost fivefold over the past 40 years, rising from around 18 million tonnes to more than 86 million tonnes by 1989."

Marine Fisheries and the Law of the Sea:
A Decade of Change
Special chapter of
The State of Food and Agriculture (FAO)

In 1992, the annual total marine catch dropped to 82.5 million tonnes. Over-capacity in the world fishing fleet has resulted in intense fishing pressure on many stocks. Thirteen of the 17 major fisheries in the world are in trouble. The FAO report quoted above states that there had been, and is, too much gear in the sea and too many boats chasing fewer and fewer fish. Fishing effort, sustainable biological yield and economic yield are out of balance. To continue to fish as in the past is a formula for disaster. Biodiversity is already threatened, job opportunities are being lost and the contribution of the fisheries sector to world food security cannot be assured.

Despite the problems, the fishery worldwide is still an important source of income and employment and there is no question that the need for fishing to continue is vital.

There is an urgency, however, for improvements in fishing practices and fisheries management to avoid overexploitation of fisheries resources or loss of biodiversity.

It was in recognition of these issues that the concept of responsible fishing came into being. Responsible fishing was the subject of the Declaration of Cancun, put forward at the International Conference on Responsible Fishing in Cancun, Mexico in 1992. The Declaration called for FAO to draft, in consultation with relevant international organizations, an International Code of Conduct for Responsible Fishing.

At the 1993 FAO Committee on Fisheries a timetable to establish such a code was agreed upon, and in February 1994, the Canadian government's offer to host an Expert Consultation on Responsible Fishing Operations was accepted by FAO.

The International Expert Consultation for the Code of Conduct for Responsible Fishing Operations was held on the west coast of Canada from June 6 to 11, 1994 in Sidney, British Columbia.

The input from the Expert Consultation will be useful in the preparation of principles for the consideration by governments at the end of September 1994 at a FAO technical consultation. From there it will go to the FAO Committee on Fisheries in March 1995. In November 1995 the Code will be presented to the FAO Conference for formal approval.

INTRODUCTION

The purpose of the International Expert Consultation was to prepare, for the consideration of the FAO Committee on Fisheries, a code of conduct and specifications for responsible fishing operations and the guidelines on how to put such a system into practice.

The Consultation was organized by the Fishing Industry Services Branch of the Canadian Department of Fisheries and Oceans (DFO) in collaboration with FAO. It was chaired by David Balfour, Director, Fishing Industry Services, DFO and John Fitzpatrick, Director a.i., Fishery Industries Division, FAO.

This report is a Canadian report providing an overview of the consultation, its structure and participants, and the principles developed on gear selectivity, energy conservation and responsible harvesting practices.

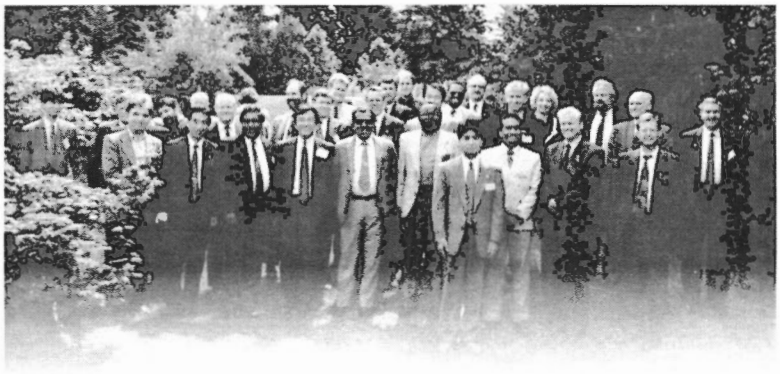
There are six chapters of the Code of Conduct. They cover fishing operations, fishery management practices, fair trade practices, aquaculture development, fisheries research and coastal zone management. When fully developed, the code would be adopted, as a whole, on a voluntary basis; however, parts of it may be more legally binding.

The input from the Expert Consultation will be used in the preparation of principles for the consideration by governments at the end of September 1994 at a FAO technical consultation where technical guidelines will be developed by the FAO Secretariat. These technical guidelines will be appended to the thematic principles established for each chapter of the Code. All of this — the general principles, the thematic principles and the technical guidelines will be submitted for consideration by the FAO Committee on Fisheries in March 1995. In this year, the Committee will be at the ministerial level, comprising fisheries ministers from around the world. The Code will then be presented to the FAO Conference in November 1995 for formal approval.

Canada has taken a strong role in the development of the concept of responsible fishing. In 1983, DFO initiated the development of an international standard for the marking of fishing vessels in conjunction with the FAO. In 1991, Fishing Industry Services hosted the FAO Expert Consultation on the Marking of Fishing Gear.

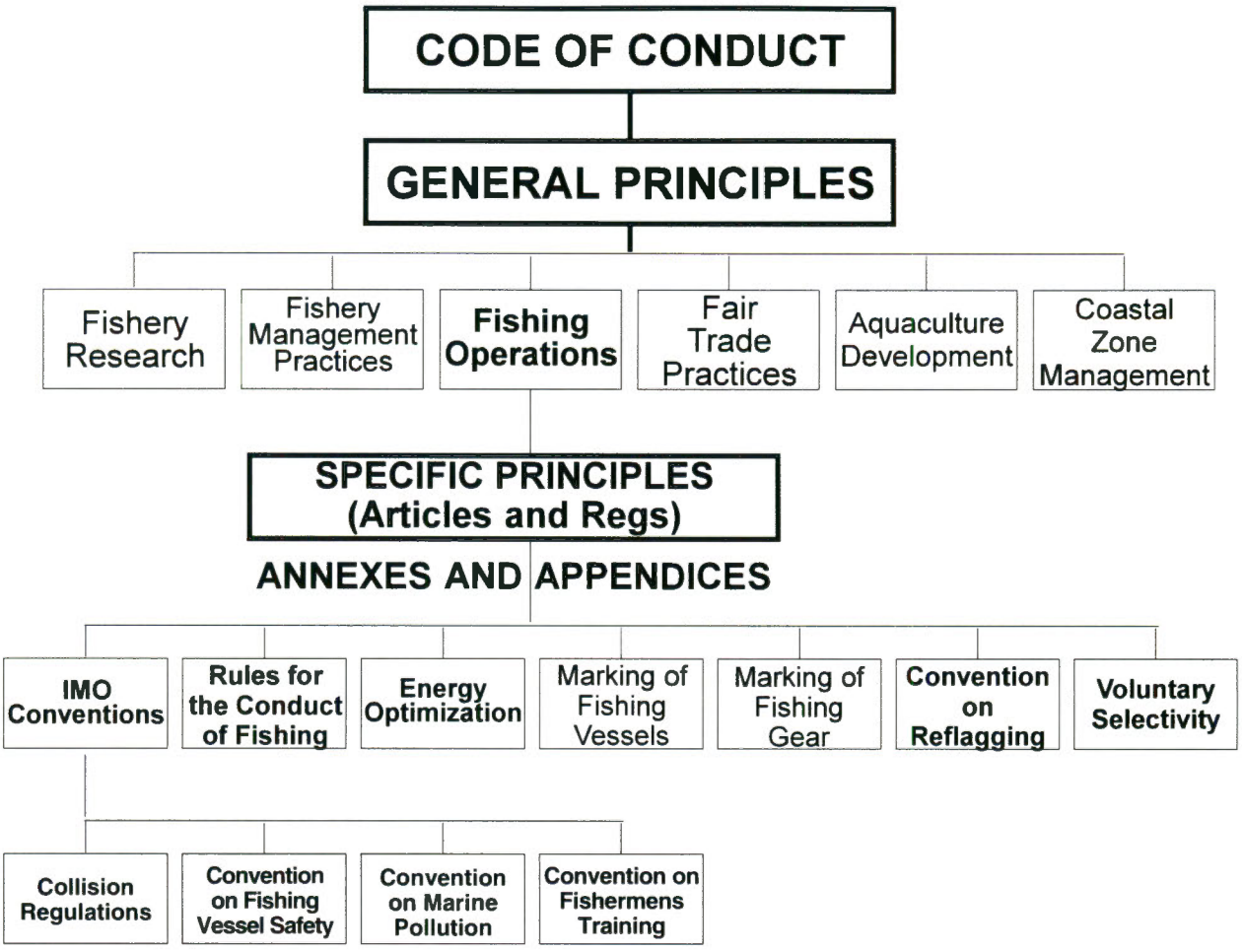
Canada was the first country in the world to ratify the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas. This Agreement ultimately means more responsibility on the part of countries whose fishing vessels are entitled to fly their flags and operate on the high seas. The flag State must authorize each vessel in order for it to fish on the high seas. It forms an integral part of the International Code of Conduct.

The importance of such an Expert Consultation cannot be undervalued. In just two years, Canada experienced the collapse of the groundfish resource base in its Atlantic



fishery. Nine of the twelve cod stocks are closed indefinitely. It is the largest single industry lay-off in Canadian history. Up to 40,000 fishers and fish plant workers are out of a job. It is more than just a fisheries crisis. It has devastating economic and social consequences for part of Atlantic Canada.

The Expert Consultation is particularly relevant to Canadian priorities towards responsible fishing practices. DFO has already introduced the Canadian Program for Responsible Fishing to promote and develop more selective fishing gear and conservation and harvesting practices. A three-year review of fishing gear and harvesting technology in support of Atlantic Canada's selectivity research programs is well underway. The technical and economic characteristics of fishing gear and methods currently in use will be assessed to help ensure biologically and economically sustainable fisheries.


CODE OF CONDUCT
GENERAL PRINCIPLES
Fishery Research
Fishery Management Practices
Fishing Operations
Fair Trade Practices
Aquaculture Development
Coastal Zone Management
SPECIFIC PRINCIPLES (Articles and Regs)
ANNEXES AND APPENDICES
IMO Conventions
Rules for the Conduct of Fishing
Energy Optimization
Marking of Fishing Vessels
Marking of Fishing Gear
Convention on Reflagging
Voluntary Selectivity
Collision Regulations
Convention on Fishing Vessel Safety
Convention on Marine Pollution
Convention on Fishermens Training

THE CANADIAN REPORT:

STRUCTURE OF THE CONSULTATION

The 1994 International Expert Consultation For The Code Of Conduct For Responsible Fishing

Fisheries experts from 20 nations—Norway, France, Chile, Brazil, Japan, Korea, Canada, China, the United States, the United Kingdom and others—were charged with bringing their personal expertise to marine resource issues at a critical time in the history of world fisheries. The views expressed at this consultation were those of the individuals and not given or taken as commitments by their governments.

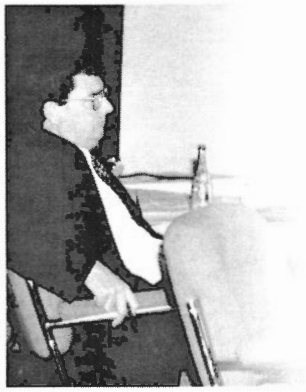
These experts were brought together to prepare, for the consideration of the FAO Committee on Fisheries, a code of conduct and specifications for responsible fishing operations and the guidelines on how to put such a system into practice.

The Code is all-embracing; however, the Consultation, as well as putting forward reference papers (see appendix), focussed on developing the principles and guidelines for responsible fishing gears, energy optimization and responsible harvesting practices.

Plenary sessions provided the opportunity for the presentation of the following discussion papers:

I FAO FOCUS PAPER

Introduction, approach and discussion of the Code for the Conduct of Responsible Fishing Operations; including such specifics as the guidelines for Flag States, for Fisheries Protection and for Cleaner Harbours and Landing Places, etc.
Discussion leader: John Fitzpatrick, FAO



II INTERNATIONAL CONVENTIONS AND APPENDICES

Statements by the International Maritime Organization (IMO) and the International Labour Office (ILO)
Discussion leader: John Thompson, IMO

III FAO REPORT AND RECOMMENDATIONS ON THE MARKING OF FISHING GEAR

Discussion leader: Andy Smith, FAO

IV FAO PAPER ON HARBOURS AND LANDING PLACES FOR FISHING VESSELS

Discussion leader: John Thompson, IMO

V RESPONSIBLE HARVESTING PRACTICES

Ghostnetting, dumping and discarding, etc.
Discussion leader: Lee Alverson, Natural Resources Consultants Ltd.

Available as a supplement to this report

VI RESPONSIBLE FISHING GEARS

Gear selectivity, methodology.

Discussion leader: John Foster, Aquaprojects Ltd.

Available as a supplement to this report

VII ENERGY OPTIMIZATION

Energy efficiency and methods of optimizing energy consumption in the harvesting of fish.

Discussion leader: Robert H. McIlwaine, Pacific Fisheries R & D Ltd.

Available as a supplement to this report

The development of principles and guidelines for consideration for the Code were developed through four working groups on:

- FAO Articles Drafting Group
- Responsible Harvesting Practices.
- Responsible Fishing Gears
- Energy Optimization

A number of principles were identified for inclusion in the Code of Conduct for Responsible Fishing. This report provides the major points of those principles developed by the participants for responsible harvesting practices, responsible fishing gears and energy optimization. A list of resource personnel assigned to these working groups can be found in the appendix to this report.

PRINCIPLES AND GUIDELINES

I RESPONSIBLE HARVESTING PRACTICES

Responsible fishing involves fishing in a manner that:

- the total annual fishing mortality allows for the maintenance of the long term sustainable yield
- ensures the productive character of the environment; and the biodiversity of the ecosystem is not threatened.

In this regard, nations should promote fishing practices which minimize:

- Mortality on non-target species as well as unwanted sizes and sexes of target species
- Unobserved fishing mortalities
- Undesirable environmental impacts of fisheries.

Responsible fishing practices should include the proper care of the retained catch, the documentation of retained and discarded catch, as well as information on the origin of catches. Stocks which have been depleted as a result of over-fishing should be rehabilitated.

Although the basic principles of the Code may be enlarged, the fundamental goals should focus on the responsibilities of fishing in regards to marine resources, their habitat, safety at sea and energy optimization.

Alternative actions required to implement responsible fishing practices should be outlined in an annex as suggested guidelines which are as follows:

THE MANAGEMENT PARTNERSHIP

Fisheries management should be an accountable partnership involving industry, science, conservation, government, and other interested parties.

RESOURCES ASSESSMENT AND INVENTORY

Governments should be responsible for assessment and inventory of the resources within their jurisdiction. In the conduct of such assessments, governments should not ignore the reservoir of information and survey capacity within the

fishing industry. Conservation and allocation measures should be made on the best scientific and socio-economic information. In this sense, governments are urged to be conservative and apply the precautionary approach as appropriate when the data and information regarding resources is uncertain. In giving effect to this code, countries should take into account special requirements of developing countries and their need for adequate financial, scientific and technical cooperation, and the importance of sustainable development of food security.

OVERCAPITALIZATION AND EXCESSIVE FISHING EFFORT

The establishment of an appropriate balance between fishing effort and resource capacity is a fundamental component of responsible fishing. The working group noted that governments have and continue to exacerbate the waste and increase the impediments to change by the establishment of national subsidies and tax relief programs which foster investment into world fisheries. However, in some instances subsidies may be appropriate to promote conversion to more selective fishing gears, licence buy backs and early retirement programs.

DUMPING AND DISCARDING

The worldwide practice of dumping and discarding has negative, socio-economic, biological and environmental implications. All fishing countries and stakeholders should take action and cooperate on an international level to minimize losses through discards. Techniques currently used to address this issue include:

- reduction in the levels of fishing
- time area closures
- the development of more selective fishing gears and/or fishing modes
- rationalization of regulatory regimes
- broadening the use and promoting the trade of currently unwanted discarded species
- outlawing of wasteful fishing practices
- development of handling methods that increase survival of discarded species.

LOST FISHING GEAR

Lost or abandoned gears are known to continue fishing and thus add to the fishing mortality imposed on susceptible species. Actions to minimize gear losses are needed. Potential solutions include:

- Better consistent marking of gear. FAO report 485 proposes a marking system to indicate the other fishermen and seafarers the presence of gear and the direction of the sets
- Gear improvements to better withstand the elements. Time release

mechnaisms to create escape areas (windows) or neutralize the gears functional aspects should be required for gears which are likely to ghost fish when lost

- Tending of nets and limiting gear deployment to levels that can reasonably be recovered under emergencies, and/or within the time authorized for fishing
- Reporting of lost gear (numbers and location) to national management bodies.

HABITAT DAMAGE

Certain fishing gears which come into contact with the seabed can disturb or damage the habitat and affect the associated benthic communities. The long term impact of this damage upon fish productivity, marine community structure and biodiversity have been little researched and remain poorly known.

No new fishing method should be introduced to an area until data from experimental fishing with the new method have been obtained and have been found to provide reliable estimates of physical disturbance to habitat. If the data indicate substantial disturbance to habitat, the fishing method should not be deployed on a commercial scale until modifications have been developed.

Any fishing method used in an area that involves substantial disturbance to habitat should be excluded from representative closed areas of the fishing ground in order to conserve part of the habitat in its undisturbed state. If the entire fishing ground has already been subject to major disturbance, closed areas should be established to permit recovery of part of the habitat.

MARINE RESERVES

Governments are urged to consider marine reserves as a management tool that can help to maintain the resource base.

FISH AS FOOD

Priority should be given to harvesting fisheries resources for human consumption.

ECONOMIC

Despite the biological basis of fisheries, management should take into consideration the social economic nature of traditional, small-scale and individual fisheries. Therefore it is imperative that managers and policy makers adopt the bio-economic social approach in regulating fisheries through fleet optimization and other appropriate strategies taking advantages of the bio-economic models. A cautious and considered approach to the issue of subsidies which have a

bearing on overcapitalization and overfishing may be adopted to avoid the deleterious effects of existing and expansionary fisheries.

DEVELOPING FISHERIES

Entry in to new or developing fisheries should be based on a management plan that establishes initial harvest and effort levels. The fishing should be scientifically studied and monitored until the extent of the resource has been determined. The fishing mortality (including discard mortality) rate should be determined to be at an acceptable level before additional controlled and monitored fishing effort is permitted.

DUMPING OF GEAR

Suggested strategies for improving compliance of laws concerning dumping at sea include:

- education
- development and adoption of onboard technology for handling of unwanted/ damaged gear
- port infrastructure to support provision of collection/disposal of unwanted/ damaged fishing gear
- substitution of environmentally friendly products to fishing operations
- regulatory framework to deal with violators.

VESSEL/GEAR SECTOR CONFLICTS

Gear and vessel interactions and conflicts are dual in nature, e.g. conflicts which occur as a result of multiple maritime users transiting a given fishing area and those which arise between different gear types.

The first set of conflicts are best resolved by insuring that fishers of all types are conversant with established domestic and international rules of the road, appropriate vessel lights and other visual signals indicating vessel activities and/or specified transit sectors etc.

Conflicts between gear types are often resolved by solutions proposed by the fishers, which in turn should be supported by fishery management and government action.

NATIONAL RESPONSES

Education and training of fishers as to the existence of the Code of Conduct for Responsible Fishing Operations and how to conduct fishing in conformance with the code should be undertaken by national governments in conjunction with other interested parties.

II RESPONSIBLE FISHING GEAR/ SELECTIVITY

DEFINITION OF SELECTIVITY

The working group defined fishing selectivity as dependent on "the ability to target and capture fish by size and species during harvesting operations, allowing by-catch to be released unharmed. By-catch may include small (or juvenile) fish, non-target fish species, sea birds and other marine organisms encountered during fishing."

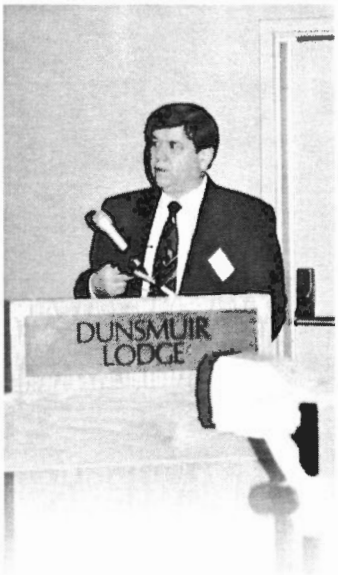
EXPECTATIONS OF SELECTIVITY

Selectivity cannot solve the problems of overcapitalization or overfishing; however, the use of selective fishing gear can contribute to the optimal use of marine resources.

STATUS OF SELECTIVE GEARS

Fishing tactics and fishing methods have evolved which are inherently selective and fishermen are fully aware of how these tactics and the rigging of fishing gear can be used to increase or decrease the selectivity of the fishing gears. However, in a global context, it is difficult to categorize the numerous different fishing methods as either "dirty" or "clean" in an environmental sense (with the possible exceptions of poison and explosives which are never appropriate). Examples of the use of any fishing gear can be quoted as causing a negative impact on the environment. The same fishing gear can also be found to be very effective with little or no impact, under different circumstances.

IDENTIFYING THE PROBLEM



Administrations should compile an inventory of their fishing fleets, catalogue of fishing gears used, the authorizations to fish and details of the catch and by-catch in relation to the available stocks. Research facilities and personnel should be employed to collect and analyze the data on an ongoing basis and provide an assessment to determine whether there is a need for selectivity. If a need has been identified, industry and fishers have to participate with scientists, technologists and managers to determine the most appropriate selective gear and technology to harvest fish stocks in a sustainable manner.

BY-CATCH: THE FAILURE OF SELECTIVITY

The lack of selective fishing measures manifests itself in unacceptably high by-catch quantities which are sometimes discarded, resulting in morally unacceptable losses in the global food supply.

Countries should encourage/enforce use of selective gears and avoid regulations that contribute to the by-catch problem. Industry

must fully adopt selective gear. Notwithstanding the need or desirability for increased market utilization of by-catch, avoidance of waste through the adoption of selective fishing measures should be promoted.

SELECTIVITY BY SIZE

Size selectivity in mobile gear can be achieved by mesh size in the cod-end, which has traditionally been chosen to reflect the size of the target species. Recent developments in trawl selectivity allow the escape of non-target species by devices and panels in other parts of the net. Fixed gear such as pots can achieve maximum size by the entrance and mesh size or bar space, while longlines tend to catch the larger fish in the population. Small pelagic fish tend to school together in large schools of the same size and species. This means that size and species selectivity is not a problem in many pelagic fishing gears (midwater trawls, purse seines). Opportunities to improve selectivity lie in further research including the optimum sizes for capture.

SELECTIVITY BY SPECIES

Species selectivity can be achieved by such devices as the Nordmore grate or by separator panels when only a limited amount of species are present and the behaviour of the species is different. Problems occur in mobile gear when the size and behaviour of the target species and by-catch are similar. Greater species selectivity can be achieved by exploiting the behaviourial differences between species (i.e. fish and shrimp). It was noted that fish behaviour is an important influence on the selectivity of fishing gears. It was emphasized that research was needed in this area and that assistance to underdeveloped countries was required in this respect.

SURVIVAL OF ESCAPING FISH

Evidence indicates that demersal fish species have high rates of survival after passing through the codend. Pelagic fish tend to be more sensitive to damage but it was noted that such fish are not usually subject to mesh size selectivity. Survival rates should be considered when introducing any new technology.

INTRODUCTION OF SUCCESSES

Administrations should take note of successful introduction of selective gear in other countries. The by-catch problem in several fisheries has been reduced by the introduction of selective devices. There are examples. In the North Atlantic 95% reduction of by-catch has been achieved by using the Nordmore Grate. Shortening the net and the use of multiple trawls has also reduced the by-catch. FAO should compile and publish a catalogue of descriptions of selective fishing gears and tactics.

ADOPTION OF NEW TECHNOLOGIES

Adopting new or modified technologies, non-technical selectivity measures, or other alternatives must be realistic. Voluntary acceptance is the key to success; however, for complete acceptance, incentives, regulation and enforcement may be necessary. This must be balanced with efforts in education, training and the promotion of selectivity. Ongoing evaluation of performance is required. Administrations and industry must be equally committed for any adoption to be successful.

INFORMATION SHARING

Information sharing and cooperation among countries and fishing sectors is essential for the successful use of selectivity measures.

SHARED FISH STOCKS

Where fish stocks are shared and use of selectivity measures is required, these measures must be common to each country.

SOCIO-ECONOMIC ISSUES

The socio-economic context of a fishery must be considered in relation to the introduction of fishing gear selectivity measures. While an introduction of gear might be technically and economically feasible in the long term, serious difficulties for the community can be created if measures are implemented suddenly. This could be a concern in fisheries where traditionally, economic returns or employment depend on some by-catch or where a fishery is vulnerable to any reduction in target catch and economic returns are marginal.

REGIONAL TRANSFER OF TECHNICAL MEASURES

The working group noted that the design of gear or selective devices intended for a particular application are not necessarily transferable between fisheries or regions. It was agreed that the combined effects of towing speed, temperature, species characteristics, and harvesting strategies/gear types together produce significant regional differences in the need and solution for selectivity. Therefore re-testing of devices and/or approaches are required prior to adoption in a new region. Trials of selective gears should also have both technical and biological dimensions. The transfer of methodology to developing countries may be desirable.

NOTE: THE USE OF FISHER THROUGHOUT THIS DOCUMENT REFERS ALSO TO NGOS, FISHERMEN'S ORGANIZATIONS AND UNIONS.

III ENERGY OPTIMIZATION

The working group recalled that the Earth Summit Agenda 21 states that:

Energy is essential to economic and social development and improved quality of life. Much of the world's energy, however, is currently produced and consumed in ways that could not be sustained if technology were to remain constant and if overall quantities were to increase substantially.

There are considerable differences in energy optimization needs between developed and developing fisheries and between large scale and small scale fisheries. To ensure that an optimization technique is applicable, the following should be considered:

- real needs identified
- economic feasibility
- socially acceptable technology with no negative impact on the community
- equitable access to technology
- long-term, continuous availability of energy, materials, service and maintenance
- existence of operating skills
- educational, instructional and technology transfer capabilities
- fisheries development achieved with respect to the environment as a whole.

Administrations, owners, managers and fishers should take into account the following guidelines in the planning, management and conduct of fish harvesting and post harvesting operations:

FISHING VESSELS

Owners, managers should ensure that:

- energy optimization concepts are incorporated into the construction, and maintenance of fishing vessel hulls
- new hull designs include energy saving features such as higher length/beam ratio; bulbous bows
- vessel hulls are routinely cleaned and coated with anti-fouling paint, and consider
- alternative and innovative energy efficient designs, such as multi-hulls
- reducing vessel weight in new construction through the use of alternative materials such as aluminum and FRP
- retrofitting existing hulls with established energy saving concepts such as bulbous bows.

PROPULSION AND AUXILIARY SYSTEMS

Energy optimization concepts, wherever feasible should be incorporated into the

installation, operation, and maintenance of propulsion and auxiliary systems. Owners and managers should:

- ensure engines and propellers are matched to vessel type and operation
- consider installing ducted propellers and controllable pitch propellers
- consider sail assisted propulsion
- consider incorporating waste heat recovery technology in larger vessels
- consider using alternate fuels, for possible reduction in atmospheric and marine pollution.

NAVIGATION AND DETECTION

Owners, managers and fishers should ensure that energy optimization is achieved through the use of navigation and detection aids and should make:

- maximum use of compass, charts and electronic aids
- maximum use of acoustic and oceanographic data, fish behaviour and migratory patterns to optimize fuel consumption during fishing operations.

OPERATIONS

- energy optimization should be a guiding factor in developing vessel and fleet strategies
- vessels should be at operated at the most effective speed for the fishing operation
- computer simulation packages should be considered as an aid to operational planning and vessel analysis.

FISHING GEAR

- energy efficiency should be an integral part of fishing gear design, operation and maintenance
- fishing gear should be designed and selected according to vessel propulsion systems, targeted fish behaviour, and deck handling capabilities
- gear should be properly maintained during fishing operations
- materials that improve gear performance should be used
- energy consumption should be monitored.

PROCESSING AND HANDLING

Several factors can result in efficient energy consumption:

- deck design for optimal product handling and gear operation
- quality improvement

- chilling, refrigeration, and preserving capabilities should match harvest rate
- optimum use of insulation.

RESOURCE MANAGEMENT

- harvest management plans should take into account energy savings guidelines developed at the Expert Consultation
- fishery managers should recognize that management techniques such as quota systems, vessel and gear regulations can have a major impact on energy optimization in fishing operations.

PROTECTION OF THE ATMOSPHERE

- provision should be made for reducing dangerous substances in exhaust gas emissions vessels should be fitted with energy optimization devices and equipment to reduce the emission of ozone depleting substance
- marine machinery should be effectively operated and maintained to ensure exhaust emissions of CO2, NOX and SOX do not exceed regulation levels (Guidelines for the application of the Montreal Protocol to the Vienna Convention)
- provision should be made for phasing out CFC's in the refrigeration systems of fishing vessels and ensure those in shipbuilding and the fishing industry are informed of the time frame
- appropriate action should be taken for the refit of existing vessels and for the inclusion of alternative refrigerants to CFCs and to Halon in fire fighting installations in specifications for new vessels
- international guidelines should be followed for the disposal of CFCs.

APPENDICES

PARTICIPANTS

Appendix I

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APPENDICES

REFERENCE PAPERS

Appendix II

(PAPERS PROVIDED TO THE CONSULTATION AS REFERENCE MATERIAL).

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