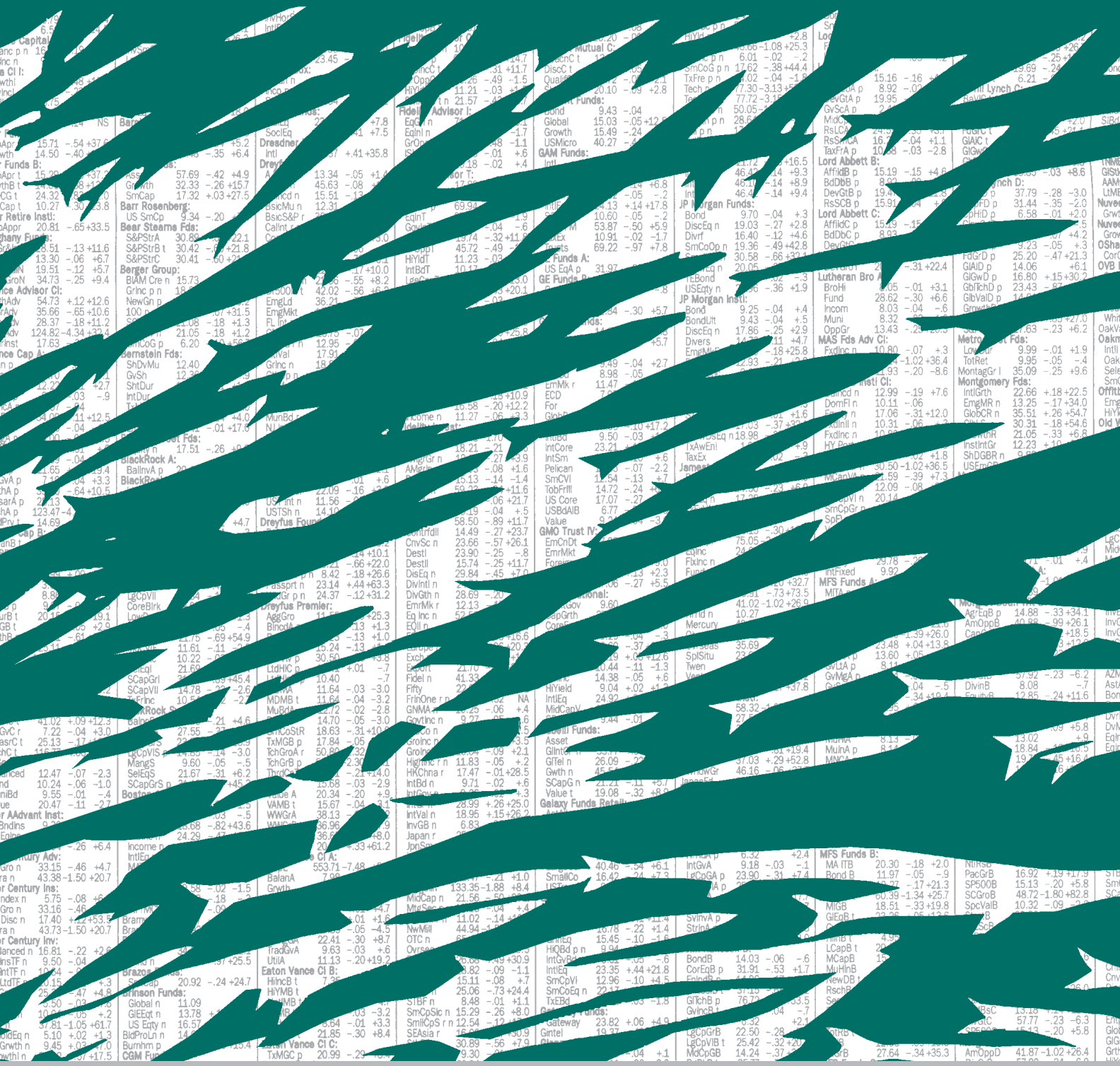
Net Gains:

Linking Fisheries Management, International Trade and Sustainable Development

CAROLYN DEERE



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About IUCN

Founded in 1948, IUCN-The World Conservation Union brings together States, government agencies, and a diverse range of non-governmental organisations in a unique world partnership of over 880 members spread across 133 countries. As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. A central secretariat co-ordinates the IUCN Programme and serves the Union membership, representing their views on the world stage and providing them with the strategies, scientific knowledge and technical support they need to achieve their goals. Through its six Commissions, IUCN draws together over 6,000 expert volunteers in project teams and action groups, focusing in particular on species and biodiversity conservation and the management of habitats and natural resources. Operations are increasingly decentralised and carried forward by an expanding network of regional and country offices, located principally in developing countries. IUCN builds on the strengths of its members, networks and partners to enhance their capacity and to support global alliances to safeguard natural resources at local, regional and global levels.

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Acronyms

APEC	Asia Pacific Economic Co-operation
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COP	Conference of the Parties
CSD	Commission on Sustainable Development (UN)
CSRP	West African Sub-Regional Commission on Fisheries
CTE	Committee on Trade and the Environment (WTO)
DWF	Distant Water Fleet
DWFN	Distant Water Fishing Nation
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FFA	Forum Fishing Agency
FTAA	Free Trade Area of the Americas
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GEF	Global Environment Facility
ICCAT	International Convention for the Conservation of Atlantic Tuna
ICSF	International Collective in Support of Fishworkers
IISD	International Institute for Sustainable Development
IMF	International Monetary Fund
ISO	International Organization on Standardization
ITQ	Individual Transferable Quota
IUCN	IUCN-The World Conservation Union
MAI	Multilateral Agreement on Investment
MDB	Multilateral Development Bank
MEA	Multilateral Environmental Agreement
Mercosur	Mercado Común del Sur, Southern Cone Common Market
MFN	Most-Favoured-Nation
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield
mt	metric tonnes
NAFO	North Atlantic Fisheries Organization
NAFTA	North American Free Trade Agreement
NGO	Non-Governmental Organisation
NPR	Non-Product-Related
OECD	Organisation for Economic Co-operation and Development
PPMs	Processes or Production Methods
RFMO	Regional Fisheries Management Organization
SPS	Sanitary and Phytosanitary Measures
TAC	Total Allowable Catch
TBT	Technical Barriers to Trade
TED	Turtle Excluder Device
TRIMs	Trade-Related Investment Measures
TRIPs	Trade-Related Intellectual Property Rights
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WWF	World Wide Fund for Nature (in the U.S. and Canada, World Wildlife Fund)
WTO	World Trade Organization

Foreword

Discussion of the linkages between trade, environment and sustainable development in the fisheries sector is timely for many reasons, foremost amongst which is the fact that many fish stocks are overfished or on the verge of depletion, which threatens livelihoods of fishing communities and marine biodiversity all over the world. The question of fisheries subsidies has also made fisheries and trade issues a 'hot' current item on the international trade agenda. Subsidies issues are consistently being raised in international fora such as the WTO and the UN Food and Agriculture Organisation (FAO) as the perverse effects both on the environment and on development of many of the subsidies widespread in this sector are increasingly recognised.

The objective of *Net Gains: Linking Fisheries Management, International Trade and Sustainable Development* is two-fold. First, it aims to bridge the perspectives and efforts of different institutions and stakeholders on the range of challenges that face the fisheries sector. Second, it hopes to stimulate responses that take into account the multiple dimensions and goals of sustainable development, such as improving resource management, conserving marine biodiversity, safeguarding the livelioods of those who depend on fisheries, and ensuring economic growth for developing countries.

Net Gains does not advance particular policy options, nor do we consider it to be comprehensive or conclusive. Rather, this publication offers a preliminary overview of the literature on the linkages, synergies and tensions between trade policy, trade rules, and conservation and sustainable development goals in the fisheries sector. Furthermore, it highlights the dimensions of the trade/fisheries/sustainability nexus that deserve further elaboration, research and debate by all stakeholders.

Net Gains, which focuses solely on marine capture fisheries, should serve as a map, albeit a "map-in-progress". It is intended to serve a variety of users, ranging from those who are developing national policies and international agreements which impact on trade and fisheries, to fishworkers and non-government organisations (NGOs), to managers of fisheries and marine living resources working at local and regional levels.

I hope that this publication will stimulate thought, help improve communication and co-ordination among our audiences and ultimately contribute to both conservation and sustainable development in the context of fisheries and international trade.

– Scott Hajost
Executive Director
IUCN – Washington Office

Executive Summary

The role of international trade in the fisheries sector is significant. In 1996, 40 percent of the production of fish and fish products was destined for international trade. Fish products are valuable exports for both developed and developing countries. The expansion of fish exports can generate significant benefits such as increased employment, financial resources for investment in productive capacity, and for fisheries management and conservation efforts. There are also potential synergies between international trade and sustainability in that some markets may demand products that are sustainably harvested.

However, international trade in fish and fish products can generate social and environmental problems. Greater industrial-scale production of fisheries products for export can deplete resources on which coastal communities in developing countries depend for nutrition and livelihoods. Increased foreign demand for fish products can also intensify economic pressures to harvest fish unsustainably, giving rise to a host of problems, for instance, excessive investments in fishing capacity, which in turn can lead to overfishing and even extinction of fish species.

In an ideal world, fisheries would be subject to effective management regimes, including conservation regulations and incentives for responsible fishing, that would ensure that fishing is kept at a level consistent with productive fisheries, healthy marine ecosystems and the livelihoods of those who depend on fish and fish products. In such a world, the economic pressures that trade and trade liberalisation can intensify would be limited, and channeled productively so as to prevent over-exploitation and destructive fishing.

In the real world, management of fisheries has been notoriously ineffective in many instances. The improvement of fisheries management and marine conservation efforts is a sine qua non for sustaining the productivity of the world's fisheries and conserving valuable marine ecosystems and biodiversity. Whilst some countries have made progress addressing the crisis affecting all but a few of the world's fisheries, national and international efforts to prevent overfishing and to introduce effective management regimes clearly need to be expedited.

In the real world, national and international trade liberalisation and expansion outpaces progress on fisheries management and the articulation of sustainable development strategies. In practice, the international trade regime is stronger than the international regimes which articulate sustainable development and environmental protection goals, particularly in terms of its enforcement capacity. Consequently, a poorly managed process of trade liberalisation both at the domestic and international levels can contribute to intensification of overfishing and destructive harvesting; as well as the loss of critical habitats and employment opportunities important to local people. Moreover, distributional goals, such as enhanced food security, may be frustrated.

Trade liberalisation can, however, offer opportunities to address factors which impede efficient utilisation of fisheries resources such as production subsidies and tariff escalation. It also has the potential to enhance market access for developing countries, as well as processing employment opportunities.

Discussion of the intersection of trade/conservation/sustainable development goals in the fisheries sector is timely for several reasons. First, many fishing nations want to expand or maintain their role in international trade. Indeed, some propose further trade liberalisation. An understanding of the environmental and social benefits and costs associated with specific proposed expansionary trade policies is critical. Second, there is growing interest in the potential for synergistic relationships between trade rules, sustainable fisheries and conservation objectives. There are, for example, hopes that international trade law provisions which oppose subsidies might be harnessed to limit overfishing and thereby generate both trade and environmental benefits. There are also hopes that trade flows based on eco-labeled products can be consistent with sustainable development principles and international trade rules, and provide incentives for better fisheries management. Finally, analysis of trade/conservation/sustainable development issues in the fisheries sector can also help us understand the pros and cons of the use of international trade measures to improve compliance with fisheries conservation and environmental measures.

Purpose of This Paper

The purpose of this discussion paper, which focuses solely on marine capture fisheries, is several-fold:

a) to offer an overview of the literature on the linkages, synergies and tensions between trade policy, trade rules, and conservation and sustainable development goals in the fisheries sector; and

b) to highlight the dimensions of this trade/fisheries/sustainability nexus that deserve further elaboration, research and debate by all stakeholders.

This paper should be understood as a preliminary foray, it is offered as a work-in-progress, and as a starting point for international dialogue around trade and sustainable fisheries issues. The paper does not aim to deliver a verdict on trade or trade liberalisation. The conclusions of the paper are organised into four types:

- Tentative factual findings presented in each chapter concerning linkages between fisheries and trade, as well as the attitudes of various constituencies;
- Policy recommendations regarding issues that require attention and suggestions about how to resolve them substantively;
- Recommendations on items for future research; and,
- Process recommendations regarding the process or institutions that could help resolve the policy issues.

Key Findings in Each Chapter

Chapter I briefly reviews the term "sustainable development" and argues that trade and environment issues can not be addressed properly in isolation from broader development and sustainable development questions. The Chapter also reviews costs and benefits associated with international trade, including environmental and social consequences of trade liberalisation and emphasises that assessments need to consider both. It notes that effective environment and natural resource management policies must be in place in order to ensure that trade and trade liberalisation contribute to effective resource allocation and sustainable development. The Chapter also notes an imbalance between the strength of the global trade regime in comparison to either the global environment regime or the global sustainable development regime; and the potential role for trade measures in strengthening conservation and resource management efforts. Finally, Chapter I notes that civil society has an important role to play in international discussions where trade, conservation and sustainable development issues intersect.

Chapter II outlines four dimensions of the fisheries crisis:

1) the decline of fish stocks and degradation of marine ecosystems and biodiversity;

2) economic incentives and pressures that drive overfishing (including subsidies);

3) political, financial and technical hurdles to improved fisheries and marine ecosystem management; and

4) threats to food security, livelihoods, employment and foreign exchange earnings. It notes the importance of fisheries to developing countries as a source of protein and employment.

The Chapter describes the reasons for the failure of existing policies to manage fisheries resources and protect the marine environment in many parts of the world, as well as the economic incentives and pressures that drive overfishing. It draw attention to financial, legal, political and technical difficulties that hamper efforts to improve fisheries management.

Chapter III provides an outline of the major products and services that are internationally traded in the fisheries sector. The key points in Chapter III are that:

1) international trade plays a significant role in the fisheries sector, and the volume of fisheries products that enter international trade is growing;

2) international trade plays a vital role in the export and development strategies of many countries, particularly developing countries, and likewise provides an important source of income for some fishing communities in both developed and developing countries;

3) developing countries are the main exporters of fish products while developed countries are the key importers;

4) in volume terms, international fisheries trade is dominated by trade in a few important fish products, especially shrimp (both cultured and wild), tuna, and fishmeal and fishoil;

5) some fish species are highly traded, even if, in volume terms, trade in that product does not play a major role in total international trade in fisheries products (e.g. live reef fish, southern bluefin tuna); and

6) international trade in the fisheries sector encompasses not only trade in fish products but also in fisheries services (e.g., vessels, technology, fishing gear and access rights).

CHAPTER IV offers different perspectives on the proposition that expansion of international trade in fish, fish products and fisheries services may affect the intensity of fishery resource use and considers related concerns about trade liberalisation. The Chapter highlights that international trade in the fisheries sector is an important source of export earnings, employment, and economic growth for many countries. It also discusses the view that there are potential for synergies between international trade and sustainability concerns where export markets demand products that are well-managed and sustainably harvested.

This chapter also points out how international trade in fisheries products and services can have a negative impact on fish stocks, the marine environment, food security, local employment and local traditions. It reminds us that international trade may have negative environmental impacts if it increases demand for and harvesting of fishery resources that are not effectively managed. Specific issues in trade, such as tariff escalation and strict or changing sanitary, phytosanitary and technical standards which can reduce the capacity of developing countries to export fish or fish products are also discussed. The Chapter includes two case studies to illustrate the case that there can be tensions between international trade and sustainability objectives in the fisheries sector. Both cases illustrate that international trade is proceeding and often expanding, with negative social and environmental consequences given the absence of adequate management systems.

CHAPTER V considers the role different trade policies and measures may play in promoting environmentally sound fisheries management, conservation of marine biodiversity and sustainable development. It reminds us that no trade policies will replace the primary need for better fisheries and marine ecosystems management in both developed and developing countries, and on the high seas. Chapter V contains discussions of possible effects on conservation and sustainable development goals in the fisheries sector of tariff liberalisation, subsidies reduction, eco-labeling and consumer boycotts. It also considers the desirability of pursuing trade measures provided for by multilateral environmental agreements. The Chapter highlights that trade liberalisation can have both positive and negative effects from a sustainable development perspective, and that there is insufficient empirical analysis of the sustainability effects of previous and proposed negotiations for liberalisation of trade in fish and fish products.

The **CONCLUSION** highlights the paper's key findings and areas identified for future research. It also identifies fora where there are opportunities for dialogue on trade, fisheries and sustainability questions and issues. Areas identified for future research include:

- assessment of the environmental and social impacts of existing and future trade and investment liberalisation efforts in the fisheries sector;
- the impact of private and public debt and debt servicing obligations on overfishing and efforts to reduce fishing capacity;
- the structure of fisheries markets, production and distribution chains, and the way in which prices for fishery products are determined;
- the international trade agreements' special and differential treatment provisions for developing countries, and how improved application of these might help or hinder efforts to reduce overexploitation of fish stocks;
- Clarification of the appropriate interpretation of WTO rules as regards processes or production methods, multilateral environmental agreements, regional fisheries management organisations, and eco-labeling schemes;
- analysis of whether growth in foreign direct investment in the fisheries sector will benefit developing countries and small-scale fishing communities, and of whether multilateral negotiations on investment might help or hinder improved fisheries management;
- exploration of the potential role for, and impacts of,

regional trade agreements in the fisheries sector (e.g. North American Free Trade Agreement (NAFTA), Southern Cone Common Market (Mercosur), Asia-Pacific Economic Co-operation Forum);

- exploring possibilities for trade-related policies that would encourage the gradual shift of a heavily over-capitalised industry to more environmentally-friendly methods of production, processing and commercialisation as well as trade in higher value-added fisheries products;
- definition of international participatory institutional mechanisms that would promote free and adequate information flows among concerned communities, as well as balanced and multi-disciplinary approaches to trade, multilateral environmental agreements and sustainable fisheries management issues and agreements.

Finally *Net Gain*s identifies key fora for future discussion of the trade-fisheries-sustainable development nexus. These fora include: the FAO Committee on Fish Trade, the World Trade Organisation (WTO) Committee on Trade and Environment, the Commission on Sustainable Development (CSD) and the UN Conference on Trade and Development (UNCTAD). Further possible fora include: joint meetings of the relevant committees and staff of the FAO, WTO, CSD, and other organisations such as the Organisation for Economic Co-operation (OECD), UNCTAD, the UN Environment Programme and non-governmental environmental and development organisations from both North and South. Other possibilities are multi-stakeholder dialogues that discuss linkages between trade, conservation, sustainable development and fisheries, and which could bring together government, industry players and NGOs from the conservation, fisheries and sustainable development communities.

Introduction

There is a general consensus that an overall decline in world fish stocks has taken place in the past several decades (FAO, 1995a; Porter, 1998b; Weber, 1994; McGinn, 1998; WTO, 1997). But despite proliferating conflicts among nations over the control of increasingly depleted fish resources, world marine fisheries production has constantly increased from 20 million tonnes in 1950 to over 120 million tonnes in 1997. Internationally, as demand and prices for many fishery products have risen, there has been a race to increasingly exploit known fish stocks, and to find and develop new stocks (McIlgorm, 1999:10).

In response to the crisis in global fisheries, advocates of sustainable fisheries and marine conservation focus on improving fisheries and ecosystems management. The effectiveness and scope of fisheries and marine management policies play a crucial role in determining the level of fisheries exploitation and its consistency with sustainable development goals.

The fisheries sector is also, however, influenced by increasing international integration. Some 40 percent of the total production of fish and fish products – worth over US$52 billion – was traded in 1996, and the percentage of trade is continuing to grow. In order to promote sustainability, it is important to understand how international trade influences consumption, production and investment decisions as well as fisheries management and marine conservation efforts.

Fish products are valuable exports for both developed and developing countries. Expansion of fish exports can generate significant benefits but can also generate social and environmental problems. Increased foreign demand for fish products can give rise to a host of problems, such as intensifying economic pressure to harvest fish unsustainably, or excessive investment in fishing capacity, which in turn can lead to overfishing and depletion of the resources on which coastal communities in developing countries depend for their nutrition and livelihood.

To date, discussion of trade issues in the fisheries sector has focussed on: a) market access for developing countries; b) the distributional impacts of international trade, such as impacts on food security; c) the effects of subsidies on fisheries; d) concerns that trade-related environmental measures may constitute disguised protectionism; e) how the mismanagement of fishery resources can lead to trade distortions; and f) fears that trade rules may interfere with or impose constraints on environmental management or conservation efforts relating to fisheries.

Given the widespread failure of fisheries management, the impacts of international trade in fisheries products on fish stocks, the marine environment and sustainable development objectives warrants greater consideration. On numerous occasion, the international community has recognised that, in the absence of adequate natural resource management policies, international trade can exacerbate resource depletion and environmental problems and thus impede sustainable development.

Both governments and non-governmental organisations (NGOs) have indicated apprehension about the influence of international trade flows on the sustainability of fish stocks, marine biodiversity and broader sustainable development objectives such as food security and employment. The United Nations Food and Agriculture Organisation's (FAO) Code of Conduct for Sustainable Fisheries (1995b), for example, calls on States, multilateral development banks, international agencies and other relevant institutions to ensure that international fish trade and export production do not result in environmental degradation or negative impacts on food security (Article 11.2.15). In an open letter to Heads of Delegations attending the 1998 WTO Ministerial Conference, Greenpeace argued that "measures for liberalising trade that affect fisheries conservation must be designed and implemented consistent with environmental goals (1998a). The European Community has also flagged the issue noting that, "…fisheries is a sector in which it is particularly important that trade liberalisation…be accompanied by sustainable resource manage-

ment both at the national and international level" (European Community, 1998:7). As many fishing nations want to expand or maintain their role in international trade, it is important to understand the environmental and social implications of the particular trade policies they propose.

There is also growing interest in the potential for synergistic relationships between trade rules, conservation and sustainable development objectives. Current trade-related propositions that warrant further discussion include eco-labelling, the reduction of subsidies and tariff escalation, and the use of trade measures to promote more sustainable fisheries.

It is not by chance that two of the most controversial trade disputes in recent history are related to marine resources and fisheries issues. In fact, perhaps more than any other sector, fisheries trade brings together the key considerations that converge on efforts to design international regimes from a sustainable development perspective. Among others, issues of imperfect science, complex social system interactions, international commons and property issues, national and community development accompany discussions of trade, conservation and environmental protection in the fisheries sector.

Discussion of sustainability considerations in the fisheries sector is often confused by the use of the word 'sustainable' for different purposes. The goal of sustainable use of fish resources focuses on the fish stock itself. The goal of sustainable fisheries management tends to incorporate a broader concern for the health not only of the fish stock but also of the surrounding marine biodiversity and ecosystems. Unfortunately, far more emphasis is placed on gathering data on a species-by-species basis rather than on an ecosystems basis. In addition, meeting the goals of sustainable development in the fisheries sector requires that fisheries management decisions take into consideration the economic, social and cultural needs of communities which depend on the resources in question.

At present, discussion of the sustainability aspects of the international trade and fisheries debate is also constrained by:

a) insufficient awareness in the fisheries and conservation communities of the impacts of potential trade flows, and of trade law and policy;

b) insufficient awareness of fisheries and related conservation issues in the trade community;

c) reluctance on behalf of governments to discuss conservation efforts that may affect domestic fishing communities, domestic industry competitiveness or access of their products to foreign markets;

d) inadequate analysis of the conservation and sustainable development aspects of the trade-fisheries nexus[1].

This paper ventures a step toward addressing these shortcomings.

Footnotes are found on pages 89 to 94

I. International Trade and Sustainable Development

Box 1. Key Principles of Sustainable Development

The term sustainable development was defined in the Brundtland report as "meet[ing] the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organisation on the environment's ability to meet present and future needs." (World Commission on Environment and Development, 1987:8)[2]. The nations of the world acknowledged the principle of sustainable development at the 1992 United Nations Conference on Environment and Development (UNCED or 'Earth Summit') (UNCED, 1992a) in adopting the Rio Declaration on Environment and Development, and Agenda 21 (termed "a blueprint for action for global sustainable development into the 21st Century.")

According to the Rio Declaration, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it (Principle 4); States should reduce and eliminate unsustainable patterns of production and consumption (Principle 8); the precautionary approach shall be widely applied by States to protect the environment (i.e. that where there are threats of serious or irreversible damage, scientific uncertainty shall not be used to postpone measures to prevent environmental degradation (Principle 15)); and national authorities should endeavour to promote the internalisation of environmental costs (Principle 16) (UNCED, 1992b).

The term "sustainable development" incorporates a commitment to poverty eradication, better meeting the needs of the majority of the people in the world, and reducing disparities in standards of living. It recognises the importance of public participation in decision-making and the role of indigenous people and local communities in both environmental management and development.

In the process of articulating principles of sustainable development at UNCED in 1992, the international community touched on international trade and environment issues. The 1992 Rio Declaration recognised that, "States should co-operate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation" (Principle 12) (UNCED, 1992b). This principle is based on the perspective that countries, particularly developing countries, are dependent on trade as a main source of income. Chapter Two of UNCED's programme of action, Agenda 21, also discusses the role that international trade and trade liberalisation can play in promoting sustainable development, and the importance of ensuring that environmental policies provide "the appropriate legal and institutional framework to respond to new needs for the protection of the environment that may result from changes in production and specialisation" (UNCED, 1992a). At UNCED, the international community also undertook a commitment to take developing countries' interests into account in formulating international environmental policies.

Likewise, the Preamble to the 1994 Marrakech Agreement which concluded the Uruguay Round of trade negotiations and established the World Trade Organization (WTO) articulated linkages between international trade and sustainable development. It included a commitment to hold trade rules accountable to environment and sustainable development objectives (WTO, 1998a:5)[3]. The Preamble states the recognition of the Parties to the Marrakesh Agreement:

"... that their relations in the field of trade and economic endeavour should be conducted with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services, while allowing for the

optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns of countries at different levels of economic development" (WTO, 1998a:5)[4].

The WTO plays a central role in the world trading system (Jackson, 1989; Hoekman & Kostecki, 1995). It provides a forum for trade negotiations and handling trade disputes, and monitors national trade policies. It also provides technical assistance and training for developing countries.

The world trading system also includes a growing number of regional trade agreements including the Asia Pacific Economic Co-operation Forum (APEC), Mercosur, the North American Free Trade Agreement (NAFTA), the Free Trade Area of the Americas (FTAA) and the South Asian Association for Regional Co-operation (SAARC). These regional agreements vary widely in terms of their articulation of and responses to sustainable development and environmental concerns (Blackhurst & Anderson, 1993). The discussion in this paper focuses primarily on the WTO, though many of the trade principles that are raised are equally applicable to regional trade agreements. (See Appendix I for brief descriptions of key regional trade arrangements).

The Agreements of the WTO rely on four key principles, contained in the General Agreement on Tariffs and Trade (GATT) (see Box 2). (See Appendix II for a list of the WTO Agreements) (WTO, 1994)[5].

WTO Members share a belief that trade policy based on these four basic principles, and good environmental policy can be compatible. According to the WTO Secretariat, WTO Members believe that the Organisation's role is "to continue to liberalise trade, as well as to ensure that environmental policies do not act as obstacles to trade, and that trade rules do not stand in the way of adequate domestic environmental protection" (WTO, 1998a:6). Respect for the four key trade principles extends to international environmental fora. At UNCED countries reiterated a preference for an open, non-discriminatory trading system. The Rio Declaration stated that:

"Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental

Box 2. Key Principles of the World Trade Organisation (WTO)

Most-Favoured-Nation Principle: The MFN Principle (GATT Article I) aims to prevent Members from treating products imported from one WTO Member less favourably than like products imported from another WTO Member (Articles I and III).

National Treatment Principle: The National Treatment Principle (Article III) forbids Members from treating imported products less favourably (for example through higher taxes) than like domestic products.

Like Products: "Like products" has been defined by dispute settlement panels set up under the GATT and the WTO to mean products with the same or similar physical characteristics or end uses. As a result, environmental trade measures that distinguish between products that have the same end use or characteristics but were produced by a different method (PPMs) have been found to violate the MFN or National Treatment Principles.

Prohibition on Quantitative Restrictions: The GATT also prohibits most quantitative restrictions on imports and exports of goods, such as quotas, embargoes and licensing schemes (Article XI).

Article XX of the GATT provides exceptions to GATT's principles. Article XX(b) allows exceptions to GATT for measures necessary to protect human, animal, or plant life or health. Article XX(g) excepts measures relating to the conservation of exhaustible natural resources. To qualify for any of these exceptions, a measure must also satisfy the requirements of the chapeau of Article XX, which provides that a measure shall not constitute arbitrary or unjustifiable discrimination between countries where the same conditions prevail and shall not constitute a disguised restriction on international trade.

Source: WTO (1994) and Downes (1999)

measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus" (Principle 12) (UNCED, 1992b).

Discussions in the WTO's Committee on Trade and Environment indicate that, at least in principle, Members are of the view that appropriate environmental management policies should be in place, and externalities internalised, before trade is expanded or liberalised[6]. There is an awareness that trade can magnify environmental problems if appropriate environmental regulations are not implemented either nationally or through multilateral environmental agreements. However, WTO Members emphasise that responsibility for environmental management policies is beyond the scope and expertise of the Organisation and that trade can not provide an adequate response to environmental problems.

International Trade in an Imperfect World

Despite recognition of the benefits that international trade can provide, numerous concerns about the environmental and social impact of trade and trade liberalisation continue to be raised and many countries are under public pressure to reconcile perceived incompatibilities between trade, environment and sustainable development objectives (Charnovitz, 1994; Esty, 1994; Low, 1992) (see Box 3). Recently, increasing public concerns about international investment issues have been expressed in connection with international trade debates. (IISD, 1997; French, 1998; World Bank, 1997a & 1997b).

Box 3. International Trade: Pros and Cons

Some Pros

- International trade can encourage countries to specialise in production of goods and services in which they are most efficient (in other words, in goods and services in which they have a 'comparative advantage'). This can promote more efficient resource use and reduce otherwise distorting stresses on the environment.
- Trade can generate higher economic growth, employment and incomes in both developed and developing countries. It is also an important source of foreign exchange.
- International trade in a world with reduced trade barriers can result in reduced prices of finished goods and services, and ultimately a lower cost of living. Production costs can be reduced (because imports used in production may be cheaper).
- International trade can provide consumers with greater choice – both by the fact that there are more goods and services to choose from, and a wider range of qualities. The quality of locally-produced goods can also improve due to competition from imports.
- International trade can promote economic growth that can help relieve poverty and provide the economic base for strengthened environmental protection.
- Elimination of trade barriers can help countries gain access to equipment and technologies that can reduce pollution, improve efficiency (e.g., energy efficiency) and reduce costs (WTO, 1998a:6; Runge, 1994:23).
- Trade protectionism and inward-looking economic policies can cause environmental damage and inefficient resource use (Johnson, 1999:2). Trade liberalisation can improve efficiency in the allocation and use of resources. The removal of trade restrictions (such as high tariffs, tariff escalation, export restrictions, subsidies and non-tariff barriers) has the potential to reduce trade distortions and yield benefits for employment and the environment.

(continued)

Box 3. International Trade: Pros and Cons *(continued)*

Some Cons

- There is no guarantee that governments will use increased wealth from trade liberalisation to improve environmental quality or to provide assistance to those whose industries or jobs have been displaced due to competition from imports.
- Given that adequate environmental policies are often lacking, both trade and trade liberalisation can exacerbate negative environmental pressures and magnify unsustainable patterns of economic activity and natural resource use (Johnson, 1999:3; Chichilnisky, 1993 & 1994; Daly, 1993; Runge, 1994:23, Arden-Clarke, 1991)[7].
- Trade can provoke environmental degradation either through the import of products that pollute the importing country, or by encouraging production that may cause damage to the environment of both the exporting and the importing country.
- The competitiveness of exports from a country may be based on lower production costs that result from weaker environmental standards (Bhagwati & Hudec, 1996). Comparative advantage based on failure to implement adequate environment or natural resource management policies may create incentives for other countries to relax their environmental policies or neglect the development of appropriate management systems. It may also lead to the migration of investment toward countries with less regulatory oversight (Arden-Clarke, 1991:8-30)[8].
- International trade can undermine States' efforts to "reduce and eliminate unsustainable patterns of production and consumption" (Rio Declaration, Principle 8), as it can increase demand for, and consumption of, goods that are already overused.
- International trade can facilitate the transfer of technologies, products and consumption patterns that are harmful to the environment and to human health such as trade in toxic wastes, hazardous chemicals and tobacco products (Khor, 1999:2).
- Increased trade can increase the need for transport to distribute traded products across borders, which can raise the level of atmospheric and oceanic pollution[9]. International trade is also a key 'vector' for the international movement of exotic and invasive species that may have negative impact on marine biodiversity (e.g., ships and fishing vessels making international voyages are often responsible for inadvertently transporting species into new environments).
- A commitment to free trade usually implies that national governments agree to submit to a number of international trade principles. Some are concerned that trade liberalisation and international trade law can constrain, or even undermine, the use of measures (such as technical, social, sanitary and phytosanitary standards) for environmental purposes (Cameron & Ward, 1993; Vogel, 1995).
- International trade can generate structural economic changes that can undermine particular industries, jobs, or communities.

The Key Trade/Environment Challenges that are of Concern in this Paper are:

What do we do if we know that adequate environmental policies are not in place?

In principle, rules relating to trade and trade liberalisation should not take precedence over environmental priorities. In practice, however, States push to expand trade without adequate environmental measures being in place, both at the regional and national levels. The world trading system does not include automatic mechanisms for taking environmental concerns and rules into account. In this context, there are legitimate concerns about negative scale effects of trade-driven growth in the absence of effective natural resource and environmental management. A 1994 Organisation for Economic Co-operation and Development (OECD) report on the effects of trade on the environment highlights that:

"Trade may worsen environmental problems when expansion of global production and consumption activities occurs in the absence of measures to control the possible adverse environmental impacts caused by market and intervention failures… The market expansion and growth stemming from trade may lead to more degradation and faster depletion of scarce natural resources due to continuing failures to internalise environmental costs, to value ecosystems properly and to define and assign property rights" (OECD, 1994:13).

OECD explicitly acknowledges that trade liberalisation may also have some negative impacts, which generally relate to an expansion of trade in the absence of correcting other types of market and intervention failures (OECD, 1994:8). The challenge is to devise policies that govern trade flows in goods and services which can be harmful to the environment in as environmentally sustainable way as possible.

Integrating the sustainable development perspective into trade and environment discussions. At present, the development and the sustainable development agendas are in constant danger of being left out of the trade/environment debate, often causing apprehension on the part of developing countries, and political deadlock at the international level on key trade/environment issues (Dominican Republic et al, 1999; Khor, 1999; IISD & IUCN, 1999:7; Repetto, 1994). Given the high priority that many developing countries give to economic growth and development of trade, civil society groups (particularly from the South) are making important efforts to shift the debate from a sharp focus on trade and environment, toward trade and sustainable development.

Developing countries have voiced particular fears that high environmental standards in importing countries can constitute non-tariff barriers, protecting domestic producers. There are concerns that:

a) new "green protectionist" conditionalities will be attached to developing countries' market access opportunities;

b) some countries' competitiveness may be eroded if they have to internalise environmental costs to comply with foreign environmental standards; and

c) protectionist groups might use trade-environment concerns to advance their own interests (UNCTAD, 1995).

The trade/environment/sustainable development nexus is particularly challenging when sustainable use of natural resources is under discussion. Export orientation and high external debt can put pressure on countries to use natural resources in such a way as to exhaust these resources. Efforts to address sustainability concerns are often difficult because for many developing countries international trade in natural resources represents a significant source of export earnings and may be a central component of the national development and debt servicing or repayment strategy (Petesch, 1992). (See Box 4 for a general discussion of trade and development concerns).

Important efforts are being made to bridge the environment and development perspectives on trade issues. In 1994, the International Institute for Sustainable Development (IISD) developed the "Winnipeg Principles on Trade and Sustainable Development" to provide a cogent framework for addressing the trade and sustainable development linkages[10]. Some environmental advocates have identified areas of mutual concern for development and environmental protection, and join developing countries in, for example, criticising low world prices for some natural resources, and arguing for reductions in external debt and for less tariff escalation (WWF, 1999).

Addressing the imbalance in strength between the global trade, environmental and development regimes and considering ways trade rules could strengthen environment regimes and promote sustainable development worldwide. Trade tends to be more of a strategic priority for States than environmental protection or developed States' arrangements in favour of developing countries. Moreover, as the compliance and enforcement mechanisms of international trade arrangements are stronger than those of international environmental agreements, or of preferential trade arrangements for developing countries, the balance is tipped in favour of trade priorities.

Efforts to bolster the global environmental regime *vis-à-vis* the trade regime include calls for formal recognition at the WTO of the status of multilateral environmental agreements (MEAs) and the permissibility of discrimination between products on the basis of processes and production methods (PPMs). Environmentalists fear that domestic efforts to use environmental regulations and standards (e.g. phytosanitary standards) to raise international environmental performance or guard against domestic environmental problems may be subordinated to international trade rules. Many environmentalists also argue in favour of harnessing trade measures (e.g., import bans) or trade rules (e.g., the WTO rules on government subsidies) to implement and enforce resource management policies and advance conservation objectives.

In terms of development concerns, many developing countries and civil society groups fear that WTO rules may be applied more stringently to limit preferential trade arrangements in favour of developing countries (for instance in the re-negotiation of the Lomé Agreement currently underway)[11]. Developing countries and many civil society groups also criticise the application of WTO rules, saying that the rules that benefit developed

Box 4. Developing Countries and International Trade

The international trade system continues to be the object of intense debate and scrutiny among many developing countries even before environmental questions are added (Krueger, 1995; Martin & Winters, 1996). Some specialists argue the need for improving opportunities for growth through increased trade. Further, some argue that tariff escalation and a range of non-tariff barriers represent long-standing impediments to entry of developing country products into high-value export markets (IISD, 1999:4).

At the same time, certain governments and NGOs are concerned that accelerated trade liberalisation and trade-driven economic growth may not be optimal policy choices for achieving sustainable development (ENDA, 1999). There is particular concern that commodity prices for the least developed countries have continued to decline and terms of trade have deteriorated markedly since the GATT and the WTO came into being (IISD, 1999:4) (See Figure 2). IISD has also noted that small developing countries may "be hamstrung by geographical, sectoral or institutional flexibilities that cause [trade] liberalisation to produce painful and protracted periods of transition" (IISD, 1999:4). Without economic reforms and accompanying domestic policies to facilitate restructuring, liberalisation may in the short and medium term actually work against growth, employment, poverty alleviation, food security, and other components of sustainable development (Oxfam, 1996).

A recent policy essay on the global economy and developing countries emphasises that "there is no convincing evidence that openness, in the sense of low barriers to trade and capital flows", systematically produces increased growth or reduced poverty unless there are complementary domestic investment and economic development policies and effective political and civil institutions for managing and mediating domestic conflicts in place. The essay highlights that the "relationship between growth rates and indicators of openness – levels of tariff and non-tariff barriers or controls on capital flows – is weak at best" (Rodrik 1999:1). It concludes that "governments and policy advisers alike have to stop thinking of international economic integration as an end in itself" and that developing nations "have to engage the world economy on their own terms" to ensure that it produces desirable outcomes.

countries are rigorously applied, whereas those – for instance on textiles – that would benefit developing countries, are not adequately implemented.

Enhancing civil society input into trade policy making. In recent years, a distinct "trade/environment/sustainable development" discussion has evolved both among nations and within civil society. Civil society actors are from both the North and South and represent the interests of a broad range of sustainable development concerns – environment, development, gender, animal rights, labour, health and consumer interest communities. The WTO and regional trade agreements have been challenged by civil society actors for being non-transparent, undemocratic and uninterested in goals other than trade (Charnovitz, 1996; Shell, 1996). The challenge is to ensure that the voices of civil society reach international decision-making fora where policies that impact sustainable development and conservation objectives are discussed (Esty, 1997; Susskind, 1994; Charnovitz, 1997).

Chapter I Highlights

The Chapter has highlighted the linkages between trade, environment and sustainable development. It has presented an overview of costs and benefits associated with international trade, including environmental and social consequences of trade liberalisation. It has also noted that the importance of ensuring that sustainable development and development concerns are integrated into trade and environment discussions, and raised the question of what we should do if trade is proceeding without adequate environmental or resource management systems being in place.

The most important points to take away from this chapter are:

- the contribution of trade and trade liberalisation to effective resource allocation and sustainable development depends in part on effective environment and natural resource management policies;
- there is an imbalance between the relative strengths of the global trade regime and the global environment and sustainable development regimes;
- trade rules may have a potential role in enforcing conservation and resource management efforts;
- trade rules may have a potential role in strengthening development efforts;
- civil society has an important role to play in international discussions where trade, conservation and sustainable development issues intersect.

A crucial point alluded to in this chapter is that the effects of trade on the environment are not always readily identifiable. They manifest themselves, to a great extent, indirectly through impacts on patterns and levels of production and consumption.

The key finding of this chapter is that there are strong grounds for assessments of past and proposed trade and trade liberalisation efforts. Assessments should identify both the positive and negative environmental and social impacts of specific trade measures and policies.

II. Dimensions of the Global Fisheries Crisis

Fish have long been an important source of food for people and animals. According to an FAO survey (see Figure 1) the number of people fishing and fish farming world-wide has more than doubled since 1970. Most of this growth has taken place in the 1980s and mainly in Asian countries where four fifths of the world fish farmers dwell. Population increases have led to an increased need for fish, but new technology and fishing techniques – such as more sophisticated nets and navigation equipment, larger ships, and introduction of refrigeration on board – have increased the length and intensity of fishing trips, often turning fishing into an industrial activity.

In recent years, overfishing has caused significant environmental, social and economic difficulties. From a sustainable development perspective, the fisheries crisis has five key aspects:

- Overfishing and stock depletion;
- Destruction of the marine habitats, ecosystems and biodiversity in which fish resources are located;
- Exploitation of endangered species as well as high rates of incidental catch and by-catch;
- Threats to food security, employment and livelihoods; and
- Over-allocation of scarce productive economic resources to the fishing sector (on a global basis) and inefficient fishing practices which contribute to the problems listed above.

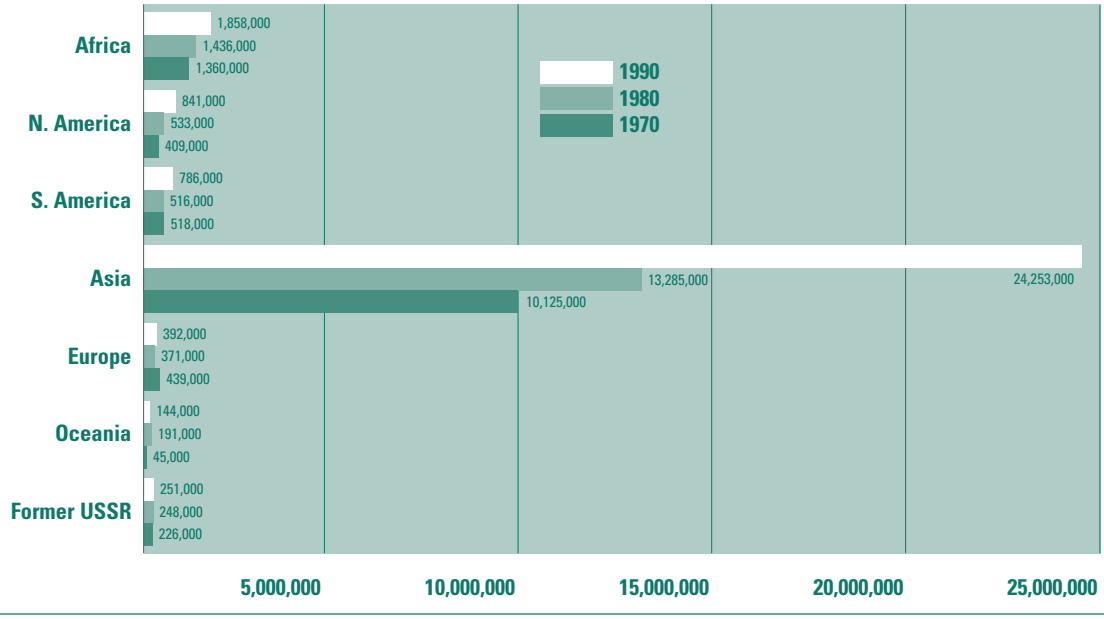
After a brief background, this Chapter reviews the following four aspects of the fisheries crisis.

- Overexploitation of fish stocks;
- Impacts on the marine environment;
- Economic, social and political aspects; and
- Fisheries management difficulties.

By Way of Background[12]

Worldwide men, women and children eat more fish than any other type of animal protein. Fish is highly nutritious and serves as a valuable supplement in diets lacking essential vitamins and minerals. Of the 30 countries most dependent on fish as a protein source, all but four are in the developing world (FAO, 1999). Fish is the prime source of animal protein for one billion people in the developing world, and whilst fish constitute approximately 7- 9 percent of the animal protein in people's diets in Europe and North America, it accounts for 26 percent in Asia,

Figure 1. World-wide Employment in the Fishing Industry for 1970, 1980, and 1990 (estimate). Source: FAO, 1999.



17 percent in Africa and in the low-income food-deficit countries (LIFDCs) including China it provides nearly 22 percent (See Box 6).

Fisheries are a source of work and money for millions of people around the globe. In 1996, an estimated 30 million men and women were deriving an income directly from fisheries. The fisheries sector in developing countries employs far more people than in industrialised countries (See Figure 1): an overwhelming majority of those earning a living from fisheries – some 95 percent – live in developing countries (FAO, 1999). In the trade context, fish are also relatively more important for developing than developed countries, given developing countries' reliance on export earnings from natural resources such as fish (See Table 1)[13].

The importance of the fisheries sector in developing countries has several noteworthy implications in the context of discussions on international trade, environment and sustainable development.

First, given the general dependence of developing countries on exports of natural resources, including fish (see Table 1), the prices at which these resources are traded is of major significance for development and sustainability. Three points are worth noting in this context: (1) world prices in general have been very unfavourable to developing countries. (As Figure 2 shows, since 1960 developing countries' purchasing power with income from exports has remained constant, despite a vast increase in the volume of exports); (2) given that developed countries are the main importers of natural resources from developing countries, developed countries policies will have a significant impact on developing countries' economies; (3) the free functioning of comparative advantage in trade relations may not per se encourage the best long-term allocation of resources in the fisheries sector.

Second, the strong importance of fisheries to livelihoods, food security and foreign exchange in developing countries means that the task of sustainably managing fish stocks should be a high priority. A central question in management of renewable resources – like fisheries – is the rate at which such resources should be used. The capacity for fish stocks to regenerate depends on the stock being used sustainably. The failure to sustainable manage and use fish stocks can reduce not only the long-term viability of a fish stock, but with it the economic benefits it can provide. In most countries, sustainable use, regulation and effective management of fisheries remains a challenge.

Concern about the state of the world's fisheries and marine ecosystems is not limited to environmentalists and conservationists (WWF & IUCN, 1998; McGinn, 1998). Many governments and inter-governmental organisations as well as actors in the fishing industry and fishworkers associations have also indicated concerns. The WTO Secretariat concurs that "[b]y all accounts, the world's fisheries resources continue to undergo an alarming deterioration, whereby the extent of annual harvesting world-wide is undermining the sustainability of fisheries resources" (1997). At the WTO High Level Symposium on Trade and Environment in March 1999, concerns about the fisheries sector and the need for urgent action were expressed many times by representatives both from the trade and the environment communities (ENB, 1999).

Table 1. Developing Country Export Earnings from Primary Resources – Expressed as a Percentage of All Exports – 1995

	World	Total America	LAIA	Africa	West Asia	Other Developing Asia (including China)	Developing Oceania
World	22%	22%	20%	28%	40%	19%	28%
Developing America	50%	48%	43%	77%	77%	67%	50%
LAIA	48%	47%	42%	74%	76%	67%	34%
Developing Africa	80%	92%	94%	66%	81%	85%	91%
Developing W Asia	80%	96%	97%	61%	57%	88%	92%
Other Devel. Asia	16%	5%	6%	18%	24%	18%	32%
China	16%	7%	7%	10%	7%	17%	11%
Developing Oceania	65%	28%	9%	0%	100%	77%	43%

Source : UNCTAD, 1999, Handbook of International Trade and Development Statistics 1996 – 1997

Figure 2. Volume of Exports and Terms of Trade of Developing Countries, 1960-1996

Source: Adapted from data in UNCTAD, 1999, Handbook of International Trade Statistics
Note: 1980=100. Data are based on 175 developing countries. The table shows the movement in developing countries purchasing power from trade since 1960 (i.e. how many imports can be bought with revenue from exports).

1. Overexploitation of Fish Stocks

Fish are a renewable natural resource, but their capacity to regenerate depends on the sustainable use of a fishery (See Box 5).

The latest global assessments by FAO indicate that 50 percent of fish stocks are fully exploited, 15 percent are overfished, and six percent are depleted and require a rebuilding strategy. Three percent of fish stocks are slowly recovering. Only 6 percent of fish stocks are underdeveloped and 20 percent are moderately exploited (Garcia & Moreno, 1999). While "fully exploited" does not imply current over-exploitation, it indicates that catch levels have reached or are very close to their maximum limit and would not yield more under increased pressure (FAO, 1999a:7). Stocks that are currently fully exploited are prime candidates to become overexploited/depleted in the near future. "Overfished" stocks are those that would gain from a reduction in fishing effort or capacity and for which there is no room for expanded production (Garcia & Moreno, 1999). "Depleted stocks" are those whose populations have declined so much that total production has also now declined, with associated environmental, economic and social losses.

Overfishing, which affects many fisheries and is a major problem, contributes inter alia to serious declines in productivity (i.e., catch rates per unit of fishing effort). Overfishing affects all but two of the world's 15 major fishing grounds (FAO, 1995a:8). Fish species that are particularly vulnerable to commercial over-exploitation include those that congregate to spawn (e.g., haddock, cod) and those that migrate through many jurisdictions and are thus vulnerable at many points (e.g., tuna, billfish) (Sen, 1994:111). Crustaceans, such as wild shrimp, are also overexploited in many parts of the world. Only the ability of the global fishing fleet to move on to lower-valued species (such as anchoveta and pilchards often used for feed and fertiliser rather than human consumption) after having overfished the more highly-valued species (such as haddock, cod and hake) has prevented sharp declines in the total catch over the past two decades (Weber, 1994:14, McGinn, 1998a:61-65; Porter, 1998a:1; Pauly et al., 1998).

Overfishing has had heavy environmental and social consequences. On the environmental side, heavy fishing can change the relative abundance of all species in the fish community. The tendency to fish lower on the food chain and target smaller and younger fish may affect predatory relationships, genetic diversity of fish stocks, and the future regenerative capacity of the fishery (Sen, 1994:111; GEF, 1998:113-4). While depletion of fish stocks need not be irreversible, fisheries can be – and often are – mismanaged to the point that their productivity is severely reduced or even lost completely

(Porter, 1998b:23). The North Sea haddock population, for example, has not recovered from overexploitation in the 1950s. The decline of cod off the Grand Banks of Newfoundland and the North Sea herring fishery (which was closed altogether in 1977-1982 and has not recovered to anywhere near its former levels) are other examples (Myers, 1998:126-127). Several commercially valuable marine species are now considered endangered or commercially extinct (e.g., bluefin tuna, some species of shark and exotic fish) (SSC, 1996 & 1997, TRAFFIC, 1997, 1998 & 1999)[14].

Box 5. What is a Sustainable Fishery?

By definition, a sustainable fishery is one where the fisheries management regime allows the resource (fish) to renew itself and takes the sustainable yield of the resource. Fish stocks should accordingly be harvested so that only the mature fish are used, leaving younger fish to age, breed, and grow until they are ready for the next catch.

The term 'sustainable' is used in different ways by fisheries managers and there is considerable debate about the appropriate criteria for a 'sustainable fishery'. It is worth recalling here that fish have their own biological production function, and an understanding of their biological characteristics and interaction with their habitat is essential. The size of the fish stock may not be known with accuracy and its minimum viable size can be quite high. In bioeconomic models used by fisheries economists, sustainability tends to refer to the maximum sustainable yield (MSY). The MSY is "that quantity (or the highest catch rate) of fish or biomass that can theoretically be caught year after year without a change in fish effort" (Sen, 1994:104). How quickly the MSY is reached depends on the health of fish populations, how fishers respond to declining biological returns (reducing their efforts, for istance), the quality of data and methods used to determine maximum sustainable yield, and perhaps most importantly, the effectiveness of management regimes. Due to these multiple uncertainties, "it has been widely recognised that MSY cannot be relied on to protect fisheries from overfishing" (Porter 1998b:26). Hence environmentalists as well as some governments, fish management experts and FAO officials now advocate a "precautionary approach" to fisheries management[15]. Furthermore, for many environmentalists and a growing number of fisheries managers, sustainable fisheries management includes taking marine ecosystems and biodiversity into account.

2. Marine Biodiversity and Environmental Impacts

There are a number of threats to marine biodiversity, including overexploitation of fish stocks; physical alteration and degradation of habitat; land- and air-based pollution; introduction of exotic species'[16]; and global climate change (Rieser, 1997:253; Norse, 1993:88)[17].

Beyond the impacts of the overfishing of target species, it is important to note that fishing has a major ecological impact on the marine environment[18]. Some large-scale fishing techniques and equipment have drastic impacts on the mortality rates of non-commercial or non-target fish and marine biodiversity (Stump & Baker, 1996; Porter, 1998b:27). By-catch causes a huge waste of marine living resources, as much of it is simply thrown back into the seas.

Overfishing and by-catch threaten the survival of particular species (e.g., sea turtles, dolphins, seabirds, sharks and corals as well as lower profile species). Similarly, the harvesting and trade of live reef fish for aquariums has been identified as a major stress on the world's coral reefs (Johannes & Riepen, 1995; Barber & Pratt, 1997).

Certain fishing gear and practices (e.g., dredging, trawling, long-hauling, cyanide, and explosives) can physically alter marine habitats causing potentially devastating long-term changes in the ecosystems (Rieser, 1997:254). There is increasing pressure for fisheries managers to consider not only the importance of marine biodiversity to the productivity of fisheries, but also the direct and indirect impacts of fishing on marine biodiversity and ecosystems (Rieser, 1997:255).

3. Economic, Social and Political Aspects of the Fisheries Crisis

Key economic, social and political aspects of the fisheries crisis include:

Declining global harvests of important commercial fish for direct human consumption threatens food security. Global demand for fishery products is growing particularly fast in developing countries due to population growth and rising incomes (Myers, 1998:126). The FAO warns that "unless the appropriate actions are taken very soon, the contribution of fisheries to food security – and to economic welfare generally – will decline" (FAO, 1995e). The effects will be felt most severely in developing countries (See Box 6). Given food security concerns, some find it absurd that a high percentage of the world catch is inefficiently converted into oil and meal to feed livestock, poultry cultivate fish.

There are efforts to maximise the productive capacity of fisheries through appropriate management regimes, reductions in post-harvest losses and increased utilisation of the fish catch for human consumption. Aquaculture has been hailed by some analysts and governments as the means of bridging the potential shortfall in fish supplies for human consumption. However, aquaculture too can have adverse environmental and social impacts[19].

Economic waste and inefficiency. From an economic perspective, the fisheries industry is grossly inefficient. Operating costs for global fishing fleets far exceed revenues. Government subsidies have been apportioned much of the blame for the fact that the capacity of the global fishing fleet is at least 30 percent – some argue as much as 100 percent – larger than is needed for efficient harvesting (Resources for the Future, 1996; WWF, 1998)[20]. An increasing number of key fisheries either operate at an economic loss, depend on government subsidies for their survival, or are closed to fishing. The difference is made up by large government subsidies (estimates of subsidies vary from US$16 to $54 billion) (Milazzo,1998). Production subsidies in the fisheries sector affect both investment (leading to excessive investment in the fisheries sector, for instance), and consumer decisions (i.e., subsidies mean that prices do not reflect real production costs, scarcity or the long-term value of marine resources, thus leading to overconsumption) in ways that are environmentally harmful. (Subsidies are discussed in greater length in Chapter 5).

Threats to employment and livelihoods: The long-term economic viability of fisheries is vital from an economic standpoint. It is estimated that as many as 200 million people depend on ocean fishing for their livelihoods and fishery products are vital exports for many countries (Myers, 1998; Botsford et al., 1997). In developing countries fishing is typically even more important to the economy than in developed countries. Many fishing industries in developing countries involve individual fishing on a small scale for personal consumption and limited sales. When fish stocks collapse,

Box 6. Who Eats Fish?

About 75 percent of the world fish catch is used for human consumption. The remainder is converted into fish-meal and oil used mainly for animal feed (including farmed fish). In recent years, the volume of fishery products marketed in their fresh state has increased, as has that of frozen fish. The relative share of finfish has declined, while that of crustaceans, molluscs and cephalopods has increased.

Asia, which combines a relatively high per caput consumption with large populations, is by far the most important fish-consuming region. Europe is the second largest food fish-consuming continent. Fish consumption is generally higher in developed countries than in developing countries, notable exceptions being found among the small developing island states. The lowest levels of consumption occur in Africa and the Near East.

In many countries, especially developing countries, the average per caput consumption may be low, but fish may be the staple food in coastal areas and among the poor, and an important source of animal proteins. The demand for fish for food is expected to continue to grow. Based on projected population growth and on the maintenance of the present world level of consumption, by 2010 it could reach 120 million tonnes a year, a substantial increase over the 75 million to 85 million tonnes of the mid-1990s.

Source: FAO (1999) "Who eats Fish?", Focus: Fisheries and Food Security,

fishing communities in both developed and developing countries face painful steps to lower fishing capacity, large-scale forced economic adjustment, food scarcity, unemployment, and the loss of income and foreign exchange from exports of fishery products (WWF & IUCN, 1998:20)[21].

Another recent source of political tension has been equity concerns. Artisanal coastal fishers in developing countries are increasingly organising to challenge competition from commercial fishers for the same fish on equity grounds. In particular, artisanal fishworkers around the world have protested the role of foreign industrial fishing fleets in their waters. The World Forum of Fishworkers – a non-government organisation comprised of national and regional fishworkers associations from around the world – has, for example, raised concerns about the "reckless plunder of the seas by industrial fleets owned by transnational companies" and related impacts on artisanal fishing communities and traditional ways of life (Sharma, 1998)[22]. One irony that is often cited is that sometimes the fish that the EU boats catch are lost to everyone, because thrown out as bycatch, whereas this same fish would be an important source of protein to West African coastal fisherfolk (Acheampong, 1997).

Some analysts suggest that small-scale fisheries should be promoted and protected for economic, ecological, technical, organisational as well as social reasons (Kurien, 1998a:3). Desirable features include reliance on labour and local skills, adaptation to the specifics of local ecosystems, flexibility, efficiency and innovation, integration in local marketing channels that cater to local food needs (Kurien, 1998a:3).

If fish resources and marine environments were managed more effectively the amount of fish and fish products available for consumption would increase. Proper management should lead to bigger stocks, bigger catches and lower consumer prices for fish (but higher profits for fishers as costs are lower)[23]. It has been estimated that in U.S. waters, "today's catch is only 60 percent as valuable as it could be if fish stocks were allowed to recover" (Myers, 1998:130)[24].

Political volatility and tensions. Historically, some States have claimed to exercise certain rights over particular zones of the seas and have tried to protect their access to particular fisheries and fish stocks. In recent years debates about use of, and access to, diminishing fish stocks have culminated in legal challenges, diplomatic tensions and even the use of force. There have been disputes between States over fish resources in the Grand Banks of Newfoundland, the Bering Sea, the Barents Sea, and off Patagonia and the Falklands. More recently, there have been conflicts over tuna in the north-eastern Atlantic, over crab and salmon in the North Pacific and over squid in the South-Western Atlantic. Particular political problems have arisen for straddling and highly migratory stocks, as was the case in the 1995 dispute between Canada and Spain[25].

For most fisheries products, environmental costs are not internalised. The result is often low fish prices that do not reflect the true value of the resource. Indeed, low prices often fuel greater consumption and demand for the products.

4. Management Problems in the Fishery Sector

There is broad consensus within the fisheries management community that one of the key reasons many fisheries fail to operate sustainably is that most fisheries management regimes fail to adequately address the open access nature of fishery resources (Lutchman & Hoggarth, 1999; Hannesson, 1997; Porter, 1998b:27)[26]. The term 'open access' describes a situation where "no single user has to pay for the right to use the resources nor does that user have exclusive rights to the resource, or the right to prevent others from sharing its exploitation" (Sen, 1994:104)[27]. This lack of property rights to fish can give rise to a host of problems: overfishing; inefficient use of factor inputs; and low returns to fishing industries. Even where management strategies do strive to limit access, limits are often not tight enough or are poorly enforced (See Box 7). For most fisheries products, environmental costs are not internalised. The result is often low fish prices that do not reflect the true value of the resource. Indeed, low prices often fuel greater consumption and demand for the products. In the next few

Box 7. Open Access and Technology in the Fisheries Sector

Where access is not adequately regulated (for instance, where property rights to fisheries resources are unclear) fisheries become congested and there is little incentive for individuals to restrain fishing efforts or to take responsibility for the sustainable management of the resource or the surrounding environment because anything they leave behind may be taken by other fish harvesters. Under such open access conditions, fishers continuously increase their fishing capacities (by investing in more vessels, improved fishing technology, greater effort (e.g., hours at sea), more labour (e.g., number of fishers on vessels) while often neglecting proper safety considerations and working conditions) in order to maintain the level of their catch, a competitive edge, and profits[28].

The role of technology in the fisheries sector is extremely important. Constant improvements in fishing technologies and equipment (e.g., larger vessels and nets, greater numbers of hooks, sophisticated gear and electronic equipment) have played a key role in enabling harvesters to maintain fish catches even though fish stocks have been declining. With the help of sophisticated satellite tracking, navigation and sonar devices fish harvesters are able to precisely locate and extract fish from the seas.

Over time, under open access, ever higher costs must be defrayed over an ever-shrinking resource base which spurs ever more intensive fishing efforts and further depletion. Ultimately, when resources are no longer able to sustain expansion, competition based on excessive fishing capacities (over-capitalisation) tends to lead to economic and social losses as well as biological overfishing (Sen, 1994:104).

pages, this section will discuss the management of fisheries resources within the jurisdiction of coastal states, management of high seas fish stocks, and why fisheries management is so difficult.

Fisheries Resources within the Jurisdiction of Coastal States

Ninety percent of the world's fish stocks are landed within the national waters of coastal States and it is here that the vast majority of overfishing takes place. Failures in fisheries management at the national level by coastal States are thus of crucial significance.

The 1982 United Nations Convention on the Law of the Sea (UNCLOS) established coastal state jurisdiction up to 200 nautical miles from a State's coast: the Exclusive Economic Zone (EEZ). Coastal States have the sovereign right to explore, exploit, conserve and manage resources within their EEZ. Since EEZs cover 40% of the world's oceans and 90% of its living marine resources, the development of the EEZ has increased opportunities for States to manage fisheries resources (since more of these fall within States' jurisdiction) and constitutes an important restriction on open access. Although UNCLOS provided coastal States the right to restrict the access of foreign fleets to the fish within their EEZs, access to fisheries resources within coastal waters remains inadequately regulated in most countries. Put simply, many countries fail to develop adequate systems for managing the fishing activities of the fleets – domestic or foreign – fishing in their EEZs. Some coastal States also face persistent illegal, unregulated and unreported fishing within their waters.

In the last few years, new international commitments have been negotiated, aiming to improve controls on fishing and the management of fisheries within coastal waters. The 1995 FAO Code of Conduct on Responsible Fisheries, for example, establishes principles and criteria for the elaboration and implementation of national policies for responsible conservation of fisheries resources and fisheries management and development (For more information on this agreement see Appendix IV). The problem of excess fishing capacity and the need to control fishing effort were also addressed in the 1995 Rome Consensus on World Fisheries and in the Kyoto Declaration and Plan of Action on the Sustainable Contribution of Fisheries to Food Security.

In addition, the 1996 draft report of the ad hoc Intersessional Working Group on Sectoral Issues of the Commission on Sustainable Development urged States ". . . to take steps to reduce overcapacity and prevent any net increased in overfished or depleted stocks . . ." Finally, in March 1999, the FAO Committee on Fisheries approved an International Plan of Action on Fishing Capacity.

States have also developed regional fisheries agreements and arrangements to develop regional approaches to management and to share information. In some instances, regional fisheries management organisations (RMFOs) have been formed. Existing RFMOs include the International Commission on the Conservation of the Atlantic Tuna (ICCAT), the Inter-American Tropical Tuna Commission (IAATC) and the Northwest Atlantic Fisheries Organisation (NAFO). There are also around a dozen FAO regional fisheries bodies, such as the Asia-Pacific Fisheries Commission (APFIC). (A list of FAO regional organisations and non-FAO RFMOs as well as their functions is contained in Appendix III).

The concrete effects of the range of international agreements are difficult to ascertain. It is clear that they have served to raise political awareness of the importance of sustainable fisheries and some governments have taken initiatives to improve their fisheries management. For example, some coastal States have taken positive measures to reduce open access by creating fishing rights (such as effort quotas, catch limits, individual transferable quotas (ITQs) and limited entry into fisheries), adopting new approaches to management (e.g. integrated coastal zone management, and marine protected areas) or facilitating traditional approaches such as community based initiatives (WWF & IUCN, 1998)[29]. Countries that are often noted for taking some successful measures to make management more efficient and effective are Iceland, New Zealand and Australia (FAO, 1999a).

There are also some industry-driven attempts at raising standards within countries. The Australian Seafood Industry Council, for example, has developed a "Code of Conduct for a Responsible Seafood Industry". Two objectives of this effort are to: "Promote the ecologically sustainable development of the seafood industry and the sustainable use of living aquatic resources and their environment" and "Establish principles and practices, in accordance with the relevant regulations, for responsible fishing, aquaculture and seafood processing activities, taking into account their relevant biological, technological, social, environmental and commercial factors and customer requirements" (ASIC, 1998a & 1998b).

High Seas Fish Stocks

Beyond EEZs are the high seas. In 1980, only about 5 percent of the world fish catch was taken from the high seas. By 1990, the figure had risen to about 11 percent. The management of high seas fisheries has proven as difficult as the management of fisheries within EEZs (WWF, 1998). According to UNCLOS, "All States have the duty to take, or to co-operate with other States in taking, such measures for their respective nationals as may be necessary for the conservation of living resources of the high seas" (Article 117)[30]. However, the migratory and straddling nature of some fish stocks, such as tuna, means that they are not subject to the effective control of any one state, let alone effective management strategies. There are also significant problems with illegal, unregulated and unreported fishing on the high seas. The result is that a number of fish stocks have come under pressure from overfishing with 14 out of 20 highly migratory tuna species being overfished (FAO, 1993).

As disputes between fishers and states about access to and use of straddling and migratory stocks intensified, the international community negotiated the 1995 UN Agreement for the Implementation of the Provisions of the UN Conference on the Law of the Sea of December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (hereinafter the Straddling Stocks Agreement)[31].

The Straddling Stocks Agreement calls on coastal States and States fishing on the high seas to pursue co-operation in relation to straddling and highly migratory stocks either directly or through the creation of appropriate subregional or regional organisations or arrangements (Articles 5 and 6). The Agreement also requires States to establish co-operative mechanisms for effective monitoring, control, surveillance and enforcement, and, as appropriate, to use access restrictions methods such as allocations of allowable catch or levels of fish effort. In addition, the Agreement calls on States to "agree on and comply with conservation and management measures for adoption by regional fisheries management organisations (RFMOs) to ensure long-term sustainability" of the fisheries (Article 10). Where regional fisheries organisations and arrangements have not been established already, high seas fishing remains essentially unregulated.

The practical effects of the Straddling Stocks Agreement have been constrained by the absence of participation by key states. The Agreement needs 30 ratifications to enter into force. However, as of September

1999, only 24 States had ratified the Straddling Stocks Agreement[32]. Moreover, few of the States with the strongest fleets targeting straddling and migratory fleets have ratified the agreement. Nonetheless, the Straddling Stocks Agreement is an important step toward better fisheries management because it provides the future possibility of taking action against non-parties to RFMOs. Even though the Agreement is not yet officially in effect, this potential is already providing encouragement to Members of RFMOs to consider action against non-parties. Another significant contribution of the Agreement is that it introduces the Precautionary Principle. This Principle aims to eliminate as a pretext for regulatory failure the absence of definitive or comprehensive information on the status of stock, and calls on States to develop the scientific data necessary for establishing standards at sustainable levels.

A related international response to problems on the high seas is the 1993 FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (Compliance Agreement), which was approved in 1993 by the 27th Session of the FAO Conference. The Compliance Agreement seeks to reduce the use of 'flags of convenience' on the high seas and to ensure that there is effective flag State control over fishing vessels operating on the high seas. This requires that Parties to the Agreement maintain a register of vessels to fish on the high seas, and that all vessels engaged in such fishing operations are authorised to do so. However, like the Straddling Stocks Agreement, the FAO Compliance Agreement is yet to come into force. As of January 1999, only 10 of the required 25 acceptance instruments had been received. (For further information on the Straddling Stocks Agreement see Appendix IV).

Why Have the Impacts of Fisheries Management Efforts Been Limited?

Concerted action at the national, regional and international level and in both developed and developing countries has been thwarted by a number of factors, including:

The lack of a single universal solution to fisheries management problems. Textbooks often argue that, although policy issues in developing countries may be quite different from those in industrialised countries, basic management models based on problems unique to the fishing industry, regardless of size and location, are applicable to countries in differing stages of development. Increasingly, fisheries management experts concur that the appropriate fisheries and capacity reduction policies will actually vary over time and according to country, region and fishery, economic and environment conditions, as well as legal and social traditions (Lutchman & Hoggarth, 1999:30)[33].

Disagreement regarding assessments of commercially important fish stocks and maximum sustainable yield. Such disagreement occurs due to scientific uncertainty concerning baselines, natural instability and fluctuations of some stocks and marine environments, and stock recovery rates. Many countries lack adequate technical or financial capacity to carry out scientific research, stock assessments or economic analyses of management regimes. Some RFMOs have their own research capacity, but many others rely on member States for scientific studies and data collection. While each of the RFMOs operates differently, they all experience similar difficulties with gathering adequate and accurate data from member States.

The cost of monitoring and enforcing fisheries management regimes. Many fisheries management agencies lack the financial and technical resources necessary for effective monitoring and surveillance of management regimes, let alone enforcement of their policies. In addition, in many instances, fisheries managers remain preoccupied with the health of the fish stock itself, and inadequate attention is devoted to managing and protecting the ecosystem in which the fish are located. A key problem for developing countries is the lack of financing around existing fisheries and environmental agreements and difficulties enforcing and collecting taxes from fishers that may raise their revenues (Hyvarinen et al., 1998:37).

The need for enforcement efforts to take into account sovereignty issues and avoid causing serious conflicts among countries. Some countries have faced particular difficulties effectively regulating the activities of foreign distant water fishing vessels operating either legally (through fishing access agreements) or illegally within their EEZs.

Limited powers of regional fisheries organisations and arrangements. The inadequate capacity of most RFMOs to enforce agreements reflects the unwillingness of member States to be bound

by them and to submit to conservation objectives. The agreements that create RFMOs are among nations whose commercial fishers are primarily interested in maximising their harvest to pay off mounting capital costs. Generally, RFMOs have not been conferred the authority to enforce their recommendations – rather, compliance responsibility lies with individual nations who are party to them. The limited enforcement authority of RFMOs limits their ability to design, monitor and implement appropriate fisheries management regimes[34]. RFMOs have also been criticised for being non-transparent and offering limited opportunity for NGO participation (Hyvarinen (1998:37). The weakness of many RFMOS has significant repercussions for the effectiveness of agreements that are even more removed from the actual fisheries sustainable management objectives and which depend on the effectiveness of the RFMOs to secure their objectives (e.g., MEAs, trade agreements).

Pressure on governments from fishing communities and industry to maintain access to fisheries and high fish catch quotas. In many countries, fishing communities have few economic alternatives to fishing. Often fishworkers cannot afford to exit the sector as they are unable to sell their assets for a sufficient price. The kinds of capital and skills used in the fishing sector are not readily transferable to other sectors in instances when conditions in market or of fish stocks change. Private debt also plays a significant role. The private debt of fishing vessels can play a powerful role in driving overfishing and constraining the ability of fishers to exit a fishery. Another problem that reduces the ability of fishers in many countries to exit the fisheries sector can be slow growth in employment alternatives. Hence, in many countries, fishworkers perceive no alternative but to pressure governments to maintain high catch quotas and access to fisheries.

Perverse economic incentives not to deal with fisheries management. For some countries, economic and social objectives with short- to medium-term benefits outweigh sustainable development objectives regarding stewardship of fish resources and marine biodiversity with long-term economic rewards. Some developed countries are particularly irresponsible as they over-subsidise and do not properly regulate the activities of their distant water fishing fleets. And governments of developing countries with high external debt may allow foreign fishing and/or promote fisheries exports as a means to earn foreign exchange without adequate regard for the implementation of adequate fisheries management systems. National perceptions of the severity and urgency of the fisheries crisis also affect the political commitment to taking necessary conservation and management action at the national, regional and international levels.

Failure of States to ratify, implement and/or comply with international agreements. Existing agreements have rarely attracted the necessary participation, co-operation and financial support of all nations. States often fail to take the measures necessary to implement international agreements due to domestic political pressures. Also, States are often hesitant to limit their own fishing activities if they are uncertain whether other countries will in fact follow suit. Finally, competition for fish resources is fierce and countries are not willing to sacrifice their share if they fear it may be taken up by others.

Chapter II Highlights

Key dimensions of the global fisheries crisis

- The decline of fish stocks and degradation of marine ecosystems and biodiversity;
- Economic incentives and pressures (including subsidies) that drive overfishing;
- Political, financial and technical hurdles to improved fisheries and marine ecosystem management; and
- Threats to food security, livelihoods, employment and foreign exchange earnings;

In order to avert the deepening of this crisis, all countries with a stake in the fisheries sector should urgently dedicate political energy, technical expertise and financial resources to the task of sustainable fisheries and ecosystem management both within EEZs and on the high seas.

Key challenges for action are:

- Ensuring that the price consumers pay for fish and fish products reflects the social and environmental cost of such products;
- Greater political commitment to effective fisheries management at the national level, including more rapid implementation of the FAO's Code of Conduct for Responsible Fisheries (1995) and the willingness to take bold measures to reduce fishing effort, eliminate excess fishing capacity and, where necessary, to generate alternative employment opportunities for affected fishing communities;
- Addressing the factors that pressure fishing communities to overfish their waters. In the case of developing countries, this may require looking for ways to reduce their need to export fish and permit access to their fisheries in order to gain foreign exchange for debt servicing. It should also prompt efforts to improve their terms of trade and to provide greater financial assistance and debt relief.
- Provision of financial, technical and scientific assistance to developing countries to help them meet international environmental obligations[35]. UNCLOS, the Straddling Stocks Agreement, the CBD and Agenda 21 each contain such specific commitments by industrial countries.
- Ratification and implementation of international agreements to limit access, improve fisheries management and reduce capacity such as the Straddling Stocks Agreement, FAO Compliance Agreement; the February 1999 International Plan of Action on Management of Fishing Capacity, as well as the 1999 International Plan of Actions on the Incidental Catch of Seabirds in Longline Fisheries and on Shark Fisheries. States should also explore how existing agreements could be supplemented by additional measures to address illegal, unregulated and unreported fishing.

III. Production and Trade of Fish, Fish Products and Fishery Services

Production

There has been a tremendous increase in fish production over the past few decades[36]. Between 1950 and 1996, world fish production increased from less than 20 million tonnes to more than 121 million tonnes (FAO, 1999a:5). This total fish production comprises output from marine and inland capture fisheries as well as output from aquaculture. In 1996, total capture fisheries production was 94.6 million tonnes with 87.1 million tonnes, or 90 percent, coming from marine capture fisheries (the rest comes from inland waters) (FAO, 1999a:3). Increases in total fisheries production are largely attributable to increases in landings of pelagic species (e.g. chub mackerel, the South American sardine (pilchard) and anchoveta) off the West coast of South America, and growth in aquaculture (FAO, 1999a: 10). Just six species – anchoveta, Alaska pollack, Chilean jack mackerel, Atlantic herring, chub mackerel and capelin – account for 25 percent of total capture fishery production (FAO, 1999b:2).

In 1996, the top capture fisheries producers were China, Peru, Chile, Japan, the United States, the Russian Federation and Indonesia (in that order) (FAO, 1999a:3). These seven countries accounted for more than half of world capture fisheries production by weight (FAO, 1999a:3).

In terms of weight, industrial fleets account for three quarters of the global fish catch. Industrial fleets consist of large-scale, capital-intensive boats that use advanced technology to locate, land and process fish (FAO, 1996; WTO, 1997:24). Industrial fleets are dominated by developed countries but a number of developing countries also have established or are establishing industrial fleets (e.g., Korea, Indonesia and Taiwan). Industrial fleets catch everything from high-value species such as tuna, cod and haddock, to those that are lower in value but in greater abundance such as anchoveta used for fishmeal. Some industrial fleets are distant water fleets that harvest fish on the high seas or in foreign EEZs (the European Union, Japan, Korea, Russia, Taiwan, and the United States are all significant distant water fishing entities).

Small-scale artisanal fisheries, on the other hand, represent one quarter of total annual global catch, despite being the dominant fishing sector in many developing countries (FAO, 1996; WTO, 1997:24)[37]. Artisanal fisheries tend to be concentrated in coastal areas and near inland waters. They are labour intensive and supply fish and fish products predominantly for local consumption, though some is for export (WTO, 1997:24).

Demand

Demand for fish and fish products is expected to continue to increase. In developed countries, there will be higher demand for quality frozen and fresh fish and crustacea

Box 8. The Peculiar Nature of Fish Trade

International trade in fish and fishery products is measured in an unusual way. The origin of fish products is determined by the 'flag' of the fishing vessel that extracted the product, not by the physical source of the product. For example, fish caught by a Spanish-flag vessel in Moroccan waters would be counted as national Spanish landings. Were fish treated like normal goods, much of what is recorded as "national landings" would be recorded in trade statistics. That is, any fish caught by a Spanish flag-vessel outside the Spanish EEZ in Moroccan waters and 'introduced from the sea' into Spain would appear as a Moroccan export to Spain, or as a Spanish import from Morocco.

The current practice has several implications. First, it means that countries with distant water fleets, like Spain, are able to land fish caught outside the national EEZ without having to pay any trade duties. Second, it indicates that trade statistics can be misleading. A country which does not have high fisheries imports or which has significant fish exports may be heavily engaged in fishing activities both on the high seas or in foreign national waters. Finally, the current method disguises the true level of regional and global integration in the fisheries sector. If 'introductions from the sea' were considered part of international trade, then the role of international trade in the fisheries sector would seem considerably more significant than it does currently.

due to greater awareness of health issues and higher incomes (Sen, 1994:110). In developing countries, wealth gains combined with population growth will lead to increased demand, mostly for products such as small pelagics for protein (Sen, 1994:110).

Trade

The international dimension of the fisheries sector is not a new phenomenon. Indeed, since the 15th century, starting with small-scale operations, the fisheries sector has been incorporated into and transformed by global forces for market expansion and capital accumulation (Kurien, 1998a:2)[38].

International trade plays an important role in the fisheries sector. The volume of international trade in fishery products has been steadily increasing. According to the FAO, export volume reached 22 million tonnes in 1996 – nearly three times the total volume traded in 1976 (FAO, 1999a:20). When reconverted into the estimated live weight equivalent, this represents 40 percent of overall fisheries production (FAO, 1999a:20)[39] (See Box 8). The value of international fish trade also continues to increase from US$17 billion in 1985, to $35 billion in 1990 to over $52 billion in 1996 (FAO 1999:20).

The growth of international trade in fisheries products is due to: a) the expansion of economies, b) increases in the availability of species in high demand (mainly due to aquaculture), and c) sustained demand for fishmeal (FAO, 1999a:19).

Trade in fisheries products takes place largely among developed countries or from developing countries toward developed countries (see Tables 2 and 3). Imports into the three largest importing blocs - Japan, the EU and the United States – have been consistently growing for the past few years (FAO, 1998b:5). It is thus clear that developed countries' trade policies have the potential to significantly affect developing countries, who in general depend heavily on primary commodities for their export revenues and foreign exchange earnings. In terms of value, more than half of fishery exports originate in developing countries, and developed countries account for 84 percent of total imports of fishery products (FAO, 1999a:21).

Table 2. Share of Major World Markets in Total International Fish Trade (1994)

	Imports %	Exports %
Developing Countries	15	51
EU	33	19
United States	14	7
Japan	31	2
Others	7	22

Source: FAO, 1997:10

Table 3. Fish Imports and Exports, by Quantity and Value, 1970-1995

	Quantity 1970 (mill. tons)	Quantity 1995 (mill. tons)	% Change 1970-1955	Value 1970 (1995 US$b)	Value 1995 US$b	% Change 1970-1955
Imports						
Developing Countries	1.8	8.2	356	2.3	9.8	326
Industrial Countries	5.6	13.0	132	10.7	46.2	332
World Total	7.5	21.2	183	13.0	56.0	331
Exports						
Developing Countries	3.8	12.6	232	4.1	29.1	610
Industrial Countries	3.6	9.2	156	6.8	22.9	237
World Total	7.4	21.7	193	11.0	52.0	373

Some numbers do not add up due to rounding. Data includes all types of fish, shellfish, oils and fishmeal.

Source: FAO (1978 & 1997c; McGinn (1998b)

Although over 180 countries are involved in international trade of fish and fish products, trade is dominated by a few nations[40]. By value, the top 10 exporters of fish and fish products are Thailand, the U.S., Norway, China, Denmark, Taiwan, Canada, Chile, Indonesia and Russia (in that order) (FAO, 1998b:7)[41] (See Table 4). In some exporting countries, fishery trade is vital to the national economy. Fish and fishery products represent more than 75 percent of total merchandise exports for Iceland, the Faeroe Islands, Greenland, Maldives, and Seychelles. Fisheries exports account for between 75 percent and 10 percent of total merchandise exports for a further 20 countries, including Chile, Ecuador, Kiribati, Madagascar, Mauritania, Peru, Morocco, Mozambique, Namibia, and Senegal (FAO, 1999a:21). Despite the importance of fisheries to their economies, FAO notes that none of the aforementioned countries accounts for a significant share of the world market, and even taken together, their exports account for only 15 percent of the total (FAO, 1999a:20).

While there is relatively little trade between developing countries in fish and fish products, there are some important trade flows amongst them (FAO, 1998b:6). For example, India, Indonesia, Malaysia, the Philippines and Thailand import fishmeal from Chile and Peru to feed their export-oriented fish farms (McGinn, 1998b:37). Likewise, Thailand and the Philippines import sardines and mackerel from Latin America for processing plants and canneries which is then usually shipped back to Northern markets (McGinn, 1998b:37). The role of China as both a fish importer and exporter is also growing rapidly (Woodrow Wilson Center, 1998:50).

Which Fish Are Traded?

The main types of fish that are traded internationally are shrimp, tuna, salmon, groundfish (cod, hake, pollack), canned small pelagics and fish that contribute to fishmeal and fishoil (e.g., anchoveta) (FAO, 1998b:7) (See Box 9).

In value terms, 95 percent of fishery exports are food products and more than 90 percent of trade in fishery products is fish processed in one form or other (FAO, 1999a:21). In terms of volume, fishmeal and fish oil account for a much greater share of exports than in terms of value (FAO, 1999a:21). The increased volume of international trade in fishery products in recent years is largely due to higher trade in low-value commodities such as fishmeal and fishoil (FAO, 1999a:21). The value of exports is thus increasing at a slower rate than the volume (FAO, 1996:7). It is also important to note that there are several cases where a high percentage of total production of a particular fishery product is traded, even if the volume of trade in that product is not significant in terms of overall volume of fisheries production and trade (e.g. trade in live reef fish for ornamental use, and trade in bluefin tuna) (Johannes & Riepen, 1995; Barber & Pratt, 1997).

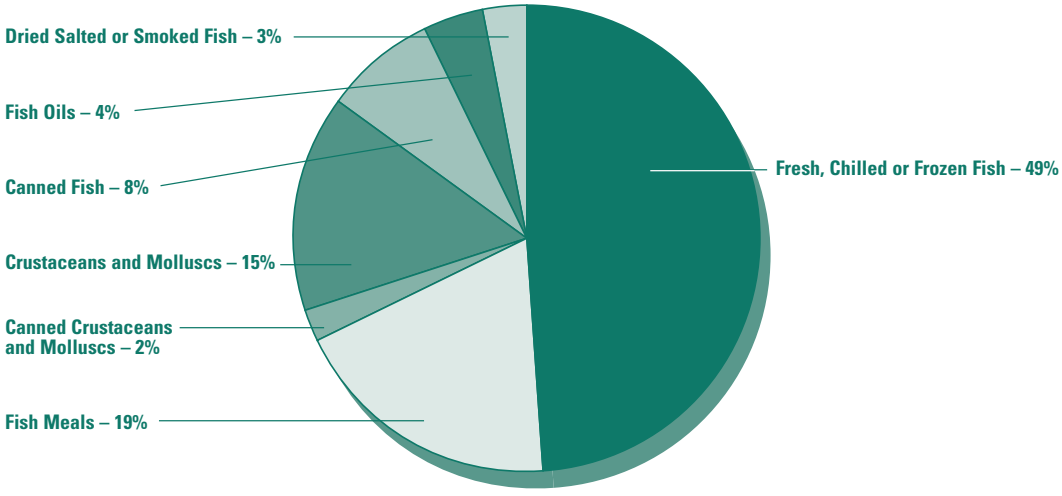
International trade in the fisheries sector includes trade in fisheries services and inputs (including fishing vessels, technology, technical advice and equipment) as well as rights of access to fishing grounds (FAO, 1998f)[42]. One common type of trade in fisheries services is the chartering of a foreign vessel (and sometimes its crew) by a domestic producer[43]. Trade in vessels can be a problem

Table 4. Top 10 Fish Exporters, by Value, 1970-1995

Country	1970 Exports (1995 US$ mill.)	1995 Exports (US$ mill.)	Share of 1995 World Total (%)	Increase since 1970 (%)
Thailand	69	4,449	8.6	6,348
United States	439	3,383	6.5	671
Norway	1,021	2,122	6.0	206
China	n/a	2,854	5.5	n/a
Denmark	651	2,459	4.7	278
Taiwan	n/a	2,328	4.5	n/a
Canada	1,011	2,314	4.5	129
Chile	107	1,704	3.5	1,493
Indonesia	21	1,666	3.2	7,833
Russia*	355	1,628	3.1	358

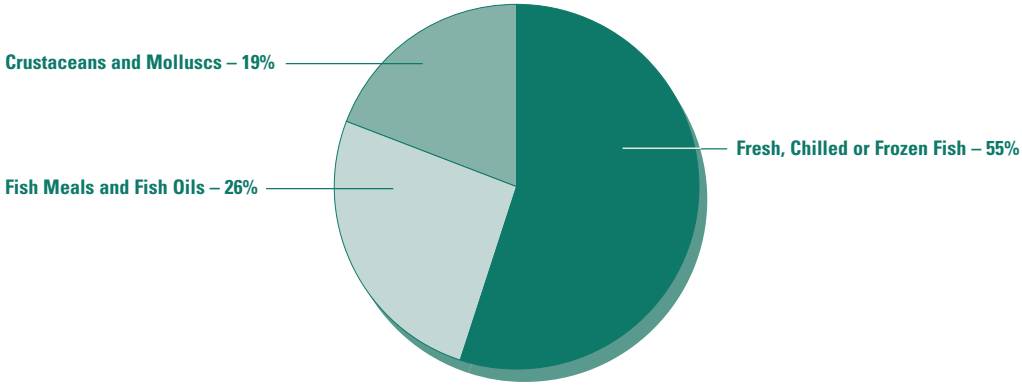
**Figure for Russia is actually for Soviet Union as data for Russia is not available.*
Source: FAO (1978 & 1997c; McGinn (1998b)

Figure 3. Share of Fishery Exports (in volume terms) by Major Commodity Groups in 1996



Source: FAO, 1997c.

Figure 4. Share of Fishery Exports (in value terms) by Major Commodity Groups in 1996



Source: FAO, 1997c.

Box 9. Who Trades What?

Fish products traded among industrialised countries concern mainly demersal species (such as cod, hake, haddock, and Alaska pollack traded in fresh, frozen whole and fillet form), low value pelagic species (such as herrings traded in fresh and frozen forms) and fresh and frozen salmon.

Exports from developing countries are mainly fresh or frozen whole tuna, canned fish (such as tuna and small pelagics), and crustaceans and molluscs (mainly shrimp and rock lobsters) traded in fresh, frozen or processed form. Products such as cultured shrimp and salmon are usually produced exclusively for export. A large part of the raw product for fishmeal also originates in developing countries (e.g., Peruvian anchoveta). Developing countries primarily export unprocessed products which gain entry to other countries at a more favourable tariff rate than value-added products. Also, an increasing volume of some high-value commodities (rock lobster and squid) is exported to emerging Asian markets for domestic consumption (Hong Kong, Taiwan, Republic of Korea, Malaysia, and Singapore).

Developing countries imports are mainly raw material such as frozen tuna for further processing and re-export (Thailand, Côte d'Ivoire, and Senegal) as well as cured, dried and smoked fish, and fishmeal.

Source: FAO (1998a:2)

when countries that decommission old vessels sell them to developing countries, as rather than resolve the issue of overcapacity, this strategy moves the problem around the globe (Lutchman & Hoggarth, 1999:6).

The rise of international tourism by people interested in recreational fishing or ecotourism is another activity that falls under the trade in services rubric. Some coastal communities depend heavily on the high payments that some sports fishers are willing to pay for coveted species. The contribution of sport and recreational fishing to foreign exchange earnings can be substantial for some local economies and countries as can the impact the impact on resources and the environment (FAO, 1996b:3).

In the last decade, international trade in access to fisheries has become of major importance to many coastal developing countries which lack the capacity to fully utilise fish resources within their EEZ. There are now numerous agreements whereby developing countries provide foreign distant water fishing fleets access to their fishing grounds. Distant water fleets from the European Union, Japan, China, and the United States, among others, have benefited from such arrangements.

Finally, while an assessment of the size, distribution and impacts of foreign direct investment (FDI), or trade in capital, is beyond the scope of this paper, it deserves mention since FDI can impact on the intensity of fishing operations and capacity. First, with global economic integration, it is likely that firms from different stages of production within the fisheries industry will merge. Hatcheries and on-growing sites, for example, are known to merge with fish distributors. This form of increased vertical integration may also expand to processing and marketing activities in the industry. The costs and benefits of such trends remain to be comprehensively studied for this sector. A second phenomenon is the rise of joint ventures between firms in different countries. For example, after the establishment of EEZs, Japan scaled back its distant water fleet, but compensated for this by investing in joint ventures in a number of countries where its fleets had formerly fished. In order to strengthen its domestic fishing industry, Morocco provides an example of one developing country that has promoted joint ventures between its domestic industry and foreign firms. Further examinations of the growth in joint ventures as well as related environmental, economic and social impacts are clearly warranted. The impact on the fisheries sector of proposals to liberalise investment regimes through a multilateral investment agreement is also worthy of consideration (Bours & Earle, 1999)[44].

Chapter III Highlights

Key points raised in this chapter are:

- International trade plays a significant role in the fisheries sector (40 percent of fish production enters international trade) and the volume of fisheries products that enters international trade is growing;
- International trade plays a vital role in the export and development strategies of many countries, particularly developing countries, and likewise provides an important source of income for many fishing communities in both developed and developing countries;
- Developing countries are the main exporters of fisheries products while developed countries are the key importers;
- Developed countries' trade policies can have a great impact on developing countries, given the latter's dependence on income from exports to developed countries;
- In volume terms, international fisheries trade is dominated by trade in a few important fish species and products, especially shrimp (both cultured and wild), tuna, and fishmeal and fishoil;
- Some fish products are highly traded, even if, in volume terms, trade in that product does not play a major role in total international trade in fisheries products (e.g. live reef fish, southern bluefin tuna); and
- International trade in the fisheries sector encompasses not only trade in fish products but also in fisheries services (e.g., vessels, technology, fishing gear and access rights).

IV. Sustainable Development and Conservation Perspectives on International Trade in Fish and Fish Products

This Chapter considers synergies and tensions between international trade, sustainable fisheries, environment and sustainable development objectives. It provides two case studies to illustrate key linkages between trade and fisheries. Discussions in this chapter on the trade-fisheries nexus draw on the broader context of trade/environment/sustainable development linkages discussed in Chapter I.

Possible tensions between trade and sustainable development in the context of fisheries have been recognised by a number of international agreements. The FAO's Code of Conduct for Responsible Fisheries (1995) advises States to ensure that their policies, programmes and practices related to trade in fish and fishery products do not result in obstacles to this trade, environmental degradation or negative social, including nutritional, impacts (Article 6.14). The same year, the Kyoto Declaration on the Sustainable Contribution of Fisheries to Food Security asked States to ensure that trade in fish and fishery products promotes food security, and that it not result in environmental degradation or adverse impacts on the nutritional rights and needs of people dependent for their well-being on fish and fishery products. However, the practical effects of trade in the fisheries sector are difficult to ascertain (see Box 10). This chapter ventures a first step toward addressing the relative paucity of information about trade impacts by drawing together the different perspectives and issues that have arisen to date.

Synergies

Important instances of synergies between international trade, sustainable fisheries, environmental protection and sustainable development exist.

Trade in fish and fish products is beneficial to many countries. Fish resources are unevenly distributed around the world and the productivity of the seas varies widely. Moreover, not all countries have access to the seas or lakes, and some of the most productive fisheries are far away from the most densely populated areas. There are thus significant gains to be made for some nations to buy fish from others, rather than catch their own fish, or lease, sell or tax the right to fish in national waters. Rather than send a fishing fleet at high cost to distant waters, it may for example, be far cheaper to obtain fish by trading (Hannesson, 1998a).

Box 10. Inadequate Data and Analysis of International Markets and Trade

Establishing the effects of trade in fish and fish products sustainable development and the environment is complicated by several factors:

- Existing studies of trade analyse changes in the volume and value of trade in fishery products by looking at changes in fish prices. Inadequate attention is dedicated to assessing the relationship between trade and price information to the status of fish stocks, ecosystem health, levels of consumption and demand, or management regimes and changes in government economic or trade policy.
- Statistics on trends in trade flows of many fishery products are not always complete and the status of fish stocks is not always known with accuracy.
- Trade studies rarely start with a fish stock and then consider the impact of international trade factors on it.
- The fisheries sector is one of the most complex in terms of production, management, and product diversity. It is also affected by numerous exogenous economic factors (e.g., changes in the economic situation of a country) and non-fishery sector factors (e.g., land based pollution, the El Niño effect, and oil spills)
- Assessments of the sustainability of fisheries and likewise the impacts on international trade, will vary depending on whether considerations of marine biodiversity and ecosystem health as well as social and cultural factors are included.
- Few studies consider the impact of the structure of the fisheries industry on trade and investment trends and the distribution of benefits. The growth of larger veritically and horizontally integrated fishing and food companies through takeovers and strategic partnerships may result in shifts in bargaining power that affect prices, products markets and international trade opportunities, fishing intensity and the access of the poor to fish.

International trade in fisheries products can generate significant benefits such as increased employment as well as financial resources for investment in productive capacity and in fisheries management and conservation efforts. International trade can reduce pressure on national waters by enabling countries to purchase fish resources or fishing access elsewhere. It can also expand consumer choice and lower consumer prices. There are also potential synergies between international trade and sustainability where export markets demand products that are well-managed and sustainably harvested.

Three of the world's most important exporters of fish – Iceland, New Zealand and Norway – are often considered to be at the leading edge of sustainable fisheries management. Indeed, it is the increasing trade opportunities that appear to have focused these countries on the need to conserve a major source of foreign earnings. The Government of Iceland, for example, has recently highlighted that its emphasis on sustainable fisheries is heavily influenced by the fact that seafood represents "more than 70 percent of the export value of goods" (Government of Iceland, 1999).

Likewise, in Namibia, the fact that fisheries account for 25 percent of its merchandise exports – translates into a keen governmental commitment to ensuring the long-term sustainability of her fishing resources. The Namibian Ministry of Fisheries and Marine Resources recently stated that: "To some, the idea that trade might support conservation might seem inherently contradictory. But our experience is clear – healthy fish stocks are good for business, good for jobs; good for development and good for trade. To achieve the very substantial benefits that are available from international trade in fish you have to have healthy stocks" (Iyambo, 1999:5). Also, the premium that many foreign consumer markets place on high quality fish products provides an incentive for some countries to perform well in terms of management and quality of their fish products.

For developing countries, the potential exists for a range of important synergies between international trade and other sustainable development objectives, such as food security and employment. We have already seen in Chapter II how important fisheries are to the livelihoods and nutritional well-being of many people in developing countries. The socio-economic role of fisheries is also significant in terms of employment and income generation. The benefits of international trade for developing countries can include:

- Increases in employment opportunities, economic growth and income generation. As such, many developing countries are anxious to expand the access of their fisheries products to international markets;
- Significant foreign currency earnings. The importance of developing country exports of fish and fish products by developing countries has been increasing in recent years---net receipts of foreign exchange for exports of fisheries products by developing countries has increased from US$5.1 billion in 1985 to US$17.2 billion in 1996 (FAO, 1998b). Potential contributions of these earnings to development objectives through. These earnings can, in turn, be used to address key development challenges. For example, they can be used to service or repay foreign debts (FAO, 1996:7). They can also be used to import less expensive protein, and so, contribute to food security (FAO, 1998b:7).
- Access to currently under-utilised fishery resources. Through trade, people with food security needs in other countries, can access fisheries resource.
- Trade opportunities can also provide opportunities and incentives for countries to develop fish production and processing activities which can in turn generate employment and national income. Exports of fish and fish products can have a central role for developing economies in terms of income and diversification of export structures.
- International trade in fisheries services, such as the provision by developing countries of access to fisheries within their national jurisdiction, can also produce benefits for developing countries. It allows national governments to extract income (through, for example, payment by foreign governments for access to their fleets, and the levying of fees on foreign fishing vessels) from a resource that the country is otherwise unable to utilise optimally.

An interesting way to explore potential synergies of trade and sustainability is to consider the negative impacts on conservation and sustainable development of certain restrictions on trade. The current protectionist stance of many industrial country trade policies toward developing country fisheries exports can inhibit potential

economic gains while also subjecting the environment to unnecessary stress. Unfavorable and declining international terms of trade for fisheries products, tariff escalation and subsidies to developed country industries can all prevent the diversification and growth of developing country fishing industries and frustrate hopes for greater foreign exchange earnings from fisheries exports. Moreover, a lack of trade opportunities for processed goods, may leave countries with no choice but to favour intensive/excessive exploitation of their fisheries resources, thus aggravating sustainability problems. There are also suggestions that trade barriers inhibit greater intra-regional fish trade between developing countries, and consequently constrain food security in some regions (Kaindaneh, 1998; ICSF, 1998b).

Tensions

Exploration of the linkages between international trade, conservation and sustainable development in the fisheries sector also reveals the potential for tensions.

International trade in fish products and services can have a negative impact on fish stocks, the marine environment, food security, local employment and traditions. This overview of possible 'tensions' begins with a consideration of environment issues and then considers socio-economic issues.

To begin, it is worth recalling that the case for synergies between trade and environment, as presented in Chapter I and above, rests on an assumption that resources are well managed. That is, in the fisheries sector, open trade could lead to a more rational exploitation of resources provided effective fisheries management measures are in place (Sen, 1994:121). In Chapter II, we saw that environmental and social problems associated with fisheries tend to be caused by poor management. Moreover, even with a remarkable shift in political will as well as financial and technical resources, efforts to remedy this situation will take many years.

In fact, in light of the evidence of mismanagement in the fisheries sector, it is plausible that trade may already have contributed to over-exploitation of many fish species (Sen, 1994). An economic model developed by one renowned fisheries economist highlights that if a fish exporting country does not manage its fisheries properly, a) "opening up trade is like opening a waste disposal bin into which productive resources will be thrown to little or no good purpose" and b) a country's gains from the opening up of fish markets in other countries "will be smaller than otherwise; in fact it will be quite likely to lose instead of gaining from trade" (Hannesson, 1998a:3). Foreign demand for fisheries products can, for example, intensify economic pressures to harvest fish unsustainably and fuel excess investments fishing capacity.

Even though WTO Members have widely endorsed the idea that international trade flows should only expand once effective resource management systems are in place, the reality is that trade objectives often take priority. In practise, many of those fish and fish products that, in terms of volume, make up the greatest share of international trade are also those that suffer from inadequate management. Wild shrimp and tuna for example, are two of the most highly traded fish products. At the same time, they are both considered overfished in many parts of the world, and are associated, respectively, with destructive harvesting techniques (e.g. trawling) and high rates of by-catch. Similarly, the raw product used for fishmeal – a major item in international trade – is often caught by biomass fishing (a generic term referring to non-selective fishery techniques using small mesh sizes for the single purpose of catching as many marine organisms as possible) which can have devastating effects on marine ecosystems. Even where the volume or value of trade in a particular fishery product is not significant as a percentage of the overall volume or value of trade in fishery products, the environmental impact may still be significant. Numerous studies, for example, emphasise the threats that international trade in live reef fish poses to coral reefs (Barber & Pratt, 1997 & 1998; Johannes & Riepen, 1995). Expanded international trade can also increase risks of water pollution and the introduction of invasive species (in addition to increased fossil fuel consumption) due to increases in travel by fishing vessels between different ecosystems and increased shipping activities.

It is important here to note that those sceptical of the benefits of international trade generally do not argue that trade per se is the root of sustainable fisheries. In theory, there is no reason why export-oriented fisheries would be inherently less sustainable or sustainably managed than fisheries producing for domestic markets. Indeed, there are many countries that do not export – or indeed who

are net importers of fish and fish products – whose domestic fisheries are unsustainably managed. Rather, the concerns raised are that in practice: 1) a key assumption on which the case for synergy between trade and conservation objectives rests – that of sustainable resource management – does not hold for the fisheries sector in most cases; and 2) adverse effects on sustainable development of poor fisheries management may be magnified by international trade and trade flows may serve as an impediment to efforts to sustainably manage fisheries.

Second, a range of concerns have been raised about tensions between international trade and the socio-economic objectives, particularly in developing countries.

On the one hand, as noted in Chapter I, developing countries have concerns about the structure of international trade and the international trading system. These concerns are also applicable to the fisheries sector. The overarching concern is that the trade policy of developed countries is biased against the interests of developing countries. The international trading system is believed to be dominated by developed countries interests and priorities without sufficient consideration of developing country needs.

An overriding objective of developing country trade policy in recent years has been for greater access to markets. At the same time, many have been anxious to ensure that their domestic markets, industry and labor forces are not overwhelmed by competition by imports from developed countries.

Developing countries draw specific attention to declining terms of trade, tariff escalation and other forms of protectionism in developing countries. The particular constraints that developing countries face in reaping the potential benefits of trade has been recognised by the international community. In response, some developed countries have arranged preferential trading agreements with developed countries which aim to provide 'preferential' access to certain products from developing countries. The various agreements of the WTO also call on developed countries to recognize difficulties that developing countries may encounter in the implementation of various trade liberalisation requirements as well with formulation and application of particular technical regulations and standards for which the Agreements call. The WTO Agreements call for developed countries to provide developing countries with differential and more favorable treatment given their special development, financial and trade needs (TBT, Article 12)[45]. (These are generally refered to as the WTO's Special and Deferential Treatment Provisions). However, advice and technical assistance provided by developed to developing countries to fulfill this commitment are widely considered to be in sufficient. Likewise, concessions that developing countries have been able to negotiate – such as extended phase-in periods and in some instances lower targets for tariff reduction – often still place unreasonable burdens on developing countries. A related problem is that developed countries often fail to implement their commitments to open access to developing country products, or do so incompletely.

On the other hand, some developing countries and in particular civil society groups within them, have raised concerns about the socio-economic impacts of the drive for greater exports. Export orientation is often associated with greater industrial scale production which is, in turn, argued to deplete the fish stocks and marine environment on which coastal communities and artisanal fishers in developing countries often depend for their employment and livelihoods (Kurien, 1998a:5)[46]. The opening of domestic fishery sectors to international trade and finance can also create pressures to adopt new technologies (sometimes setting aside seasonally-operated, more environmentally benign, fishing gears), export more fishery products, and redefine access rights to coastal marine resources (Kurien, 1998a). In some countries, there have been campaigns by artisanal fishing communities against competition from domestic export-oriented industrial fleets as well as from foreign industrial fleets with access rights to domestic waters (Sharma, 1998; Kurien, 1995; ICSF, 1994 & 1984)[47]. In several instances, it has been argued that export orientation, foreign investment and technological imports have resulted in social and economic disarray, and a waning of an earlier sense of resilience, cohesion and community.

Groups focused on food security issues highlight that the current structure of international production and trade of fisheries products and services can generate perverse and undesirable outcomes. One concern is that the export of fishery products can also deprive some poor people within the exporting countries of cheap protein (ICSF, 1998a:57). In particular, a great quantity of potential food for the poor is diverted toward the export of

fishmeal for animal food. Many critics of export orientation draw attention to the fact that some low income, food deficit developing countries (LIFDCs) actually export more fishery products than they imports (Kurien, 1998b)[48]. Even though developing country exports to developed countries are often high value species that are unlikely to be fished for or consumed in the local market, trade-offs with food security can still arise. For example, the prices of fish in local markets may rise or the availability of fish for local markets may decline as fishing effort shifts to more profitable fish for export markets. There is also criticism of high rate of discards from industrial fleets fishing for export to foreign markets[49].

Finally, the presumption that export orientation can promote incomes and employment should not be uncritically accepted. The poor, including rural fishing communities, are politically marginalised in many instances and their governments can not be relied upon to defend their interests (ICSF, 1994b:1). While some relatively well-off, larger and more powerful fishing groups with a nation, such as industrial fishers, might benefit from international trade, artisanal fishers may not. In addition, while national economic gains may be attained, the dividends from greater export orientation may systematically fail to reach the poor or those in coastal areas. Net foreign currency earnings are not applied to domestic needs in order of humanitarian priority. While this is largely an issue of government policy, the implication is that one cannot assume that earnings from fish trade will be used either to import less expensive protein or to improve fisheries management (Kurien, 1998b & Ahmed & Stone, 1997:3).

A key challenge to those interested in teasing out the different linkages, tensions, and synergies between international trade, conservation and sustainable development objectives is a lack of empirical evidence. In this light, the following two case studies are included to:

1) highlight the possible tensions between trade and sustainable development goals when adequate management systems are not in place;

2) demonstrate how it is possible for trade flows to undermine management efforts;

3) illustrate how trade rules and measures are being considered or used to improve fisheries management.

Case Study 1: International Trade and Bluefin Tuna

Bluefin tuna is considered to be in a "critical state", yet it remains a highly traded item (FAO, 1997a). This case study reviews the management problems faced by bluefin tuna, considers the role of trade as an aggravating factor, and highlights the role trade measures can play in management strategies. The case study begins with a brief overview of the state of bluefin stocks and the role of trade.

There are two species of bluefin tuna: northern bluefin tuna (NBT) and southern bluefin tuna (SBT). Bluefin tuna travel are highly migratory, travelling long distances throughout their life[50]. NBT is taken mainly in the Atlantic but also in the Pacific while SBT is taken mainly in the southern Indian and Pacific Oceans (Metzler, 1993). Bluefin tuna is a temperate, long-lived species, and stocks only recover quite some time after fishing efforts are reduced.

In early 1998, the biomass of the SBT stock was reported to be "well below the minimum level recognised internationally as acceptable for supporting sustainable utilisation" (CCSBT, 1998b:1). SBT is so severely depleted that some believe SBT "could be at risk of commercial extinction in the Southern Ocean if fishing continues at current levels" (TRAFFIC, 1997). Indeed, IUCN – The World Conservation Union recently listed the species as "critically endangered". NBT is also considered depleted in the Atlantic, and is overfished in the North Pacific Ocean (Garcia & Majkowski). Concern about the depleted status of bluefin tuna stocks has been so high that it has resulted in calls for bluefin to be listed as one of the species whose trade is regulated by the Convention on International Trade in Endangered Species (CITES)[51].

Bluefin tuna are caught using purse-seining and pole-and-line methods (for fish found close to the surface) and longline methods (for large individuals of northern and southern bluefin tuna which are found at greater depths). The use of longlines attracts attention because it is associated with high incidental catch of sea-birds. Several species of albatross and petrel are suffering due to SBT fishing operations. At least 44,000 albatrosses are killed annually in Southern Ocean longline fisheries and the numbers could be much higher (Greenpeace, 1998c). While fishing for SBT is not the

only threat to these birds, it plays a significant a role. International concern about the impact of longline fisheries on seabirds led to the completion in 1999 of an FAO International Plan of Action on the Incidental Catch of Seabirds in Longline Fisheries.

In terms of volume, bluefin tuna does not represent an important proportion of the overall catch of tuna. The reported world bluefin tuna catch in 1996, for example, was about 64,000 tonnes, or just two percent of the world tuna catch for that year. However, the bluefin catch is significant in value terms: the price commanded by bluefin tuna makes it possibly the most commercially valuable marine finfish in the world. Average monthly prices for fresh imported bluefin tuna in the Tokyo market exceed US$50 per kg (Brown, 1998:23). Many fish-exporting countries have tried to gain a share of the bluefin market.

A high percentage of bluefin is destined for international trade: over 60 percent of SBT, for instance, is traded internationally (ABARE, 1999:24). Japan is the world's primary consumer of both northern and southern bluefin tuna (90 percent overall, and 95 percent of SBT) and also the largest importer (Gaski, 1993:vii).

The causes of the overexploitation and decline of bluefin tuna stocks are numerous and complex. The migratory nature of bluefin tuna make it more difficult to monitor, assess stocks and regulate fishing than for non-migratory species. Regulations to maintain stocks above maximum sustainable yield levels have not been adopted by the relevant regional fishery commissions, and where limits have been set, they are inconsistently enforced.

Bluefin tuna is at the mercy of the changing political agendas of the nations through whose water they swim, as well as the distant water fishing nations (DWFNs) operating on the high seas through which they migrate. There have been problems with unauthorised fishing in zones of national jurisdiction by highly mobile industrial tuna fleets, and the international community has experienced considerable difficulties in managing fishing on the high-seas. A central problem is that the major consumer of bluefin tuna, Japan, imports bluefin tuna from non-member countries of the key RFMOs responsible for managing bluefin tuna. This international trade frustrates prospects for better management.

Although there have been recent international efforts to manage fishing of bluefin tuna and address the open access condition of high seas fisheries, these have faced many obstacles. Recent international agreements include: 1) the 1995 Straddling Stocks Agreement, 2) the International Commission for the Conservation of Atlantic Tunas (ICCAT), 3) the Commission for the Conservation of Southern Bluefin Tuna (CCSBT), 4) The Convention on International Trade in Endangered Species of Wild Flora and Fauna.

1. The 1995 Straddling Stocks Agreement

When they enter into force, the 1995 Straddling Stocks Agreement (as well as the 1993 FAO Compliance Agreement) will constitute important new legal bases for conservation and management of fish species such as NBT and SBT[52]. It must however be recalled that few significant fishing nations have signed or ratified either Agreement (See Chapter II).

2. The International Commission for the Conservation of Atlantic Tunas (ICCAT)

ICCAT is the key RFMO for NBT. ICCAT has monitored and regulated the tuna fishery in the Atlantic Ocean since 1969[53]. It comprises 25 nations that fish tuna, mostly in international waters. Currently the membership includes: Costa Rica, France, Japan, Nicaragua, Panama, USA, Venezuela and Vanuatu.

Conservation measures taken by ICCAT have included limitations on catches to recent levels for bluefin in the Atlantic and catch prohibitions for purposes other than monitoring bluefin tuna in the Western Atlantic. Despite more than 25 years of management efforts by ICCAT, stocks of NBT have declined precipitously. The Western Atlantic population of Northern Bluefin Tuna has declined by between 77 percent and 90 percent and the Eastern Atlantic population by about 50 percent since 1970 (Gaski, 1993:1).

ICCAT's management efforts have been unsuccessful for a number of reasons, including internal disputes about the status of bluefin tuna populations and the scientific assumptions ICCAT uses to make stock assessments; illegal fishing by member and non-member countries; failure by some ICCAT members to observe the Commissions' size regulations for northern bluefin tuna in the Mediterranean Sea (FAO, 1997a:5); non-participation of key fishing countries (Singh, 1997)[54]; and

operation of completely unidentified vessels in the Mediterranean[55].

While ICCAT member nations seek to restrain the harvests of their fishing industries in order to reverse the overexploitation of stocks, the fishing fleets of non-member nations may increase their harvesting – exploiting the fish which other nations seek to preserve. This dilemma not only frustrates the purposes of ICCAT, but also serves to aggravate tensions among the fishing industries of complying nations.

Some conservation organisations conclude that ICCAT management schemes are ineffective and fail to balance biological factors with economics and politics (Gaski, 1993:1). Indeed, ICCAT's latest management plan for bluefin stocks faces strong criticism from the environmental community[56].

It is noteworthy, however, that ICCAT has included provisions for the use of several trade-related measures in its 1994 bluefin action plan to promote greater compliance with its management objectives. First, ICCAT introduced a Bluefin Tuna Statistical Document Program for frozen fish and fresh fish (1993). The aim of the Program is to increase the accuracy of bluefin statistics and to track unreported catches by non-members and vessels flying flags of convenience. The program requires all contracting parties to ensure that all imported bluefin tuna be accompanied by an ICCAT Bluefin statistical document which details the name of the exporter and importers and the area of harvest (WTO, 1998e). The program is applied to products from both contracting and non-contracting parties.

Second, the bluefin action plan provided for the possibility of trade measures against both members and non-members of ICCAT. ICCAT recommended that Contracting Parties take non-discriminatory trade-restrictive measures consistent with their international obligations on bluefin tuna products from those non-Contracting Parties whose vessels have been fishing for Atlantic bluefin tuna in a manner in consistent with the ICCAT conservation recommendations (ICCAT, 1996 & 1997). In 1997, ICCAT members implemented a prohibition on imports of bluefin from non-members Honduras and Belize and against Panama in 1998. At the same time, ICCAT established penalties to be imposed on members if they overharvest tuna beyond specified quotas.

The use of trade measures by ICCAT highlights that in some international fora, there is a belief in usefulness of trade-related sanctions to strengthen enforcement of fisheries and conservation regimes. No objections to the use of these trade measures were filed by ICCAT member countries. This fact could be interpreted as an indication that ICCAT member countries perceive no inconsistency between the use of trade measures and the trade rules of the WTO. However, it remains possible that non-members of ICCAT could raise objections. The uncertainty on this point highlights the importance of formal clarification by the WTO of the legality of trade measures imposed by MEAs or RFMOs so that fisheries management arrangements are confident about using this tool where necessary.

3. The Commission for the Conservation of Southern Bluefin Tuna (CCSBT)[57]

Management initiatives for SBT have been disappointing: parental biomass has continued to decrease[58]. The status of the SBT parental population is now less than 9 percent of that in 1960, which is well below the biologically safe level of 15-30 percent (Sant, 1997, 1999).

The main nations which fish for SBT are Australia, Indonesia, Japan, New Zealand, South Korea and Taiwan. Since the 1980s, Australia, Japan and New Zealand have applied catch limits (quotas) to their fishing fleets to enable the stocks to recover. In 1994, the three nations signed a Convention for the Conservation of SBT (which created the Commission for the Conservation of Southern Bluefin Tuna (CCSBT)) to ensure the appropriate management, conservation and optimum utilisation of SBT. The main conservation and management strategy adopted by the CCSBT is to set the total allowable catch (TAC) for the fishery and to allocate the quotas among nations. The Commission restricts fishing in breeding grounds and the taking of juvenile fish. It also collects and analyses information about SBT and the fishery, including by-catch of albatross.

The CCSBT's work has been stalled by an inability of the nations involved to agree on the level of Southern Bluefin Stocks and the appropriate catch levels[59]. Australia and New Zealand both argue that given scientific uncertainty and the necessity of applying the Precautionary Principle, there should be no catch increases. However, in 1998, Japan increased its catch without the approval of other CCSBT members (CCSBT,

1998a:2). Tensions are now so high that the members have submitted to formal dispute resolution proceedings before the International Tribunal for the Law of the Sea[60].

Increased fishing for SBT by non-members of the CCSBT is exacerbating the declining status of SBT. Recent estimates of the annual catch of non-member countries are in the order of 2500 to 3000 mt, including 700 mt taken by Indonesia from the spawning grounds south of Java (Singh, 1997). The CCSBT has been seeking co-operation from non-parties such as Taiwan, Indonesia and South Korea. The Commission notes that "[c]o-operation with Indonesia is especially important as the SBT breeding ground lies within the Indonesian fishing zone" and improvements in the long-term state of bluefin might be achieved by protecting small or immature fish and targeting older age-groups more precisely (CCSBT, 1998; FAO, 1997:4). In the meantime, longliners from Taiwan, South Korea and Indonesia remain outside the CCSBT. Despite six years of effort, no additional fishing nations have joined the CCSBT.

International trade in SBT is clearly frustrating prospects for better management of SBT. A key problem is that Japan imports tuna from non-member countries of the commission (TRAFFIC, 1997). TRAFFIC suggests that "Japan should suspend [imports from non-member countries] until these nations join the Convention" (TRAFFIC, 1997). Likewise, researchers from the Australian Bureau of Agricultural Research and Economics (ABARE) argue that Japan should consider refusing imports of SBT from countries outside the CCSBT management arrangements, or who are deemed to be fishing in an unsustainable manner (Cox et al, 1999:3).

The entry into force of the Straddling Stocks Agreement would enhance the legal grounds for members of the CCSBT to take action against non-parties which violate CCSBT management efforts. With regard to the international trade system, however, the same issue arises of whether WTO Members would consider such measures, taken to enforce a multilateral consensus-based decision by a RFMO, WTO-compatible.

4. Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973)

When trade itself poses a major threat to a species, countries can restrict trade in a particular species by including it on one of the Appendices (lists) of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). In 1992, the Swedish government, concerned about the status of bluefin and supported by environment groups, proposed that Western and Eastern Atlantic NBT be declared an endangered species and listed under CITES.

However, the proposal to list NBT failed due to opposition from members of ICCAT. Japan, the USA, Canada and other ICCAT nations promised the CITES delegates that new voluntary conservation measures for Atlantic bluefin tuna would be enacted and that the Western Atlantic catch would be reduced by 50 percent. These commitments effectively limited the discussions on the merits of subjecting Atlantic bluefin tuna to CITES' rules, and the proposal was withdrawn as a result of ICCAT's assurances. In 1994, Kenya had proposed listing both Northern and Southern bluefin tuna under CITES, although the proposal was later withdrawn due to assurances and pressure from other States.

Despite the reluctance, to date, of its Parties to list commercially valuable fish species, CITES potentially has a strong role to play in the management of species, like bluefin tuna where international trade itself poses a threat to species survival (CITES is discussed in further length in Chapter V).

Conclusion

This brief case study has provided an illustration of just one instance in which international trade is proceeding despite obvious failures in management regimes. Moreover, it shows that international trade flows are a central dynamic in the market for this bluefin tuna. Lucrative trade flows from both members and non-members of the relevant RFMOs are increasing incentives for excessive fishing of bluefin tuna and undermining management efforts. Indeed, the case of bluefin tuna clearly suggests the recognition by many countries that trade measures can be a useful and necessary tool for strengthening compliance with management efforts.

Case Study 2: EU-West Africa Fishing Access Agreements

Many coastal developing countries sell rights of access to their fisheries to foreign governments or companies. This sort of trade has been of major concern to some fishworkers organisations and environmental advocates.

These kinds of access agreements became possible with the creation of Exclusive Economic Zones (EEZs). According to the United Nations 1982 Convention the Law of the Sea (UNCLOS) a coastal State has the sovereign right to exploit resources within its EEZ. Where the coastal State's harvesting capacity falls short of the Total Allowable Catch (TAC) set for the resource, the coastal State may give access to the surplus to other States. Many countries have taken up this opportunity. The United States and Japan, for example, have access agreements with South Pacific nations. The EU also has agreements with Argentina and Morocco, and China and Japan have agreements with Southeast Asian fishing nations. The focus of this case study is on the Euro-African fishing access agreements.

The EU has a network of 25 fishing access agreements, 14 with countries in Africa and the Indian Ocean (including, Côte d'Ivoire, Mauritius, Guinea-Bissau, Senegal, Equatorial Guinea) allowing about 4,000 European vessels to fish in non-EU zones (Brown, 1998:23).

From a European perspective, the benefits of the fishing agreements include: 1) access rights for large factory trawlers and tuna fleets; 2) potential employment for EU crews; 3) employment opportunities for EU processing facilities; and 4) subsidised fish supplies for the EU market (Acheampong, 1997; WWF, 1996). Potential benefits for West African governments include direct payments of foreign exchange for resources that were harvested for next to nothing by foreign fleets before the establish of EEZs (WWF, 1996).

In 1996, the annual compensation paid to African countries under 16 of these agreements amounted to around US$196 million (Porter, 1998b:51). That sum represents 30 percent of the entire annual EU budget for fisheries restructuring and indicates the importance of the redeployment of its distant water fleet to non-EU waters in general and African waters in particular (Porter, 1998b:51)[61].

To date, EU agreements with West African States are considered "first generation" agreements in that they provide EU fishing vessels with access to the EEZs of partners countries in return for financial compensation without any reference to environmental or social considerations (CFFA, 1996). (Second and third generation fishing agreements are different. Countries like Morocco and Argentina already have so-called second generation agreements which focus on joint ventures by enterprises in the two countries and the transfer of appropriate technology to develop the capacity of the local population to exploit their own fisheries resources (Chaytor, 1999:5))[62].

The development of fishing access agreements is problematic for a number of reasons: these agreements have been known to threaten local small-scale fisheries and jeopardise food security in the host country; discourage the exit of fishing vessels from troubled fishing industries; and transfer the problem of overcapacity and overfishing in the economic zones to which access is subsidised (CFFA, 1996). The expansion of fisheries access agreements has been further criticised because of the economic context of the agreements; the subsidies implicit in the agreements; and inadequate management of the activities of EU fleets in foreign waters.

- **The economic context of Euro-African fishing agreements.** There is significant economic inequality between the EU and the individual coastal African States. Most of the African countries that have granted access to European fishing vessels are also labouring under high external debt ratios. With few exceptions, African coastal States lack the capacity to develop their own industrial fishing fleet and their fisheries agencies tend to have meagre budgets. For many of them, the coastal fleet consists almost entirely of artisanal fisherfolk. Fishing agreements can be an easy way to earn substantial foreign exchange from their fishery resources. The funding received by West African countries through the fisheries agreements benefits their treasuries with few strings attached (Chaytor, 1999:4). For example, the US$6 million in compensation Guinea-Bissau was receiving through its fishing agreements with the EU in 1990 represented more than one-third of is foreign exchange earnings that year; by 1995, the potential amount it expected to receive from the EU

in compensation was equivalent to three-quarters of its revenue from exports of goods and services and 41 percent of government revenues.

The pressures of external debt are believed by some analysts to be a significant force driving African countries to accept fishing agreements (Porter, 1998b:51). Mauritania's need for foreign exchange has spurred the government to sell access to the same stocks twice, and to conclude an agreement that increased the number of boats fishing for cephalopods despite scientific warnings of the critical status of cephalopods due to overfishing (Chaytor, 1999:3). This has had both environmental and social impacts. Within two months of the EU boats starting to fish in Mauritania for cephalopods, the price per tonne of octopus fell by US$200. This drop in income has in turn affected artisanal fisheries which depend particularly on cephalopods for their livelihood (Chaytor, 1999:3).

- **Access agreements constitute significant subsidies to the EU distant water fleet.** The bulk of the EU fleets' costs of access (e.g., the compensation and licence fees) is paid by the EU through its compensation package to the country. The multiplication of fishing access agreements arranged by the European Commission have permitted EU fishing companies to deploy large numbers of their vessels in African waters at only a fraction of the commercial value of the catch[63]. Under these agreements, the EU pays from seventy to ninety percent of the costs of access, depending on the country and the fishery (Porter, 1998b:36). In the case of tuna fishing (to which at least eight of the agreements are dedicated) the implicit subsidies are even higher due to unrealistically low license fees paid by fishing companies from the EU and their vessels to the coastal State governments. Furthermore, the cost of access for tuna vessels is only a fraction of the value of the catch because the assessment of fees per vessel assumes an annual catch that is unrealistically low (Porter, 1998b:51).

- **Distant water fleets in African waters often disregard African fishing regulations and international agreements.** While the text of each Euro-African fishing agreement commits the EU to ensuring that its vessels will adhere to national regulations when fishing within the country's jurisdiction, the reality is different (Acheampong, 1997; WWF, 1996). In Guinea Bissau, for example, it has been long acknowledged that EU trawlers have ignored the prohibition on fishing of unauthorised species. These trawlers have also harvested far more of non-target species than permitted under the Agreement, entered zones that are supposed to be reserved for artisanal fishing, and used illegal gear (Porter, 1997:14).

- **African States are unable to meaningfully monitor activities or catch levels of EU fleet.** There are protocols to the fishing agreements that detail procedures for fishing licenses, fees, catch allowances and inspection. However, African States lack the personnel, financial resources, communications systems, and institutional structures needed to establish monitoring and surveillance systems (Chaytor, 1999:3; Porter, 1997:8). Guinea-Bissau has only one surveillance ship, while "Mauritania's surveillance capabilities are such that the risk of illegal fishing being detected is considered to be minute" (Porter, 1997:8).

- **Income from fishing agreements may not be spent on fisheries-related activities.** Some agreements may specify funding for training in scientific, technical or economic disciplines connected with fisheries. In the absence of validation, it is unclear whether funds received are indeed used for that purpose. One recent study concluded that "most of the money, paid directly into the partner countries' treasuries remains there, and is not further distributed. No funding is designated for conservation or sustainable use" (Chaytor, 1999:2)[64].

- **Fear of losing the compensation for the fishing access agreements may deter African States from insisting on greater compliance with management efforts** (Porter, 1997:8). Morocco and Namibia are two states in the region that have taken a firm stance with foreign countries on access agreements. Namibia has been able to significantly restrict foreign access to its

fisheries. And, as noted above, Morocco has been able to withstand significant pressure from the EU to maintain traditional access agreements and has negotiated an agreement more favorable to its domestic industry. While these two cases illustrate the countries can have 'cards to play', most West African countries seem reluctant to "rock the boat" with the EU, in part for fear of losing vital funding (1999:4)[65]. Another factor that some analysts suggest weakens the negotiating power of West African states is the EU's practice of negotiating individually with each country. The argument is that this strategy puts pressure on West African countries not to push too hard for changed terms of agreement for fear that the EU will simply negotiate with another state instead (in which case, the state in question would forfeit potential compensation – even if inadequate) (Porter, 1998a).

- **West African coastal states face the challenge of the depletion of valuable fisheries stock.** There are concerns among fishing communities and environmental groups within and outside these countries that coastal States have authorised too much fishing. One analyst cites the observation of a World Bank fisheries advisor that at least one state had issued foreign fishing permits that exceed the total biomass of the resources (Porter, 1997:15).

- **Fishing by foreign fleets has adverse consequences for many African coastal societies.** The effective development of the fisheries sector in West Africa could lead to "increased food security, increased employment opportunities, reduction of poverty, enhanced government revenue earning capacity and increased foreign exchange earnings with enhanced protection of the marine environment" (Chaytor, 1999:1). However, in practice, many observers fear that foreign fleets deplete resources on which local fishing communities depend (CFFA, 1996; Brown, 1998:23). In Mauritania, for example, "national industrial fleets used to have the monopoly over frozen fish and fish landed in Mauritania which was then sold overseas, but with the advent of the foreigners, markets overseas have been lost and the local industry's income has dwindled" (Chaytor, 1999:4).

In Senegal, where fish provide most of the country's animal protein, the Senegalese Fishermen's Association has strongly opposed EU demands in the negotiations on a two-year fisheries agreement for access to coastal pelagic species of fish, over 90 percent of which are consumed locally (Brown, 1998:23). Some of Senegal's artisanal fishing communities are totally opposed to the agreements and have joined forces with NGOs and other groups (mostly environment and development NGOs) in Europe to:

a) educate the European public, national parliaments and EU officials about the nature and impacts of the Agreements; and

b) lobby EU officials to change the nature and content of the agreements.

Positions on how the agreements should be changed vary among NGOs. Some groups would like the agreements to be stopped altogether. Other NGOs and communities believe the agreements can be beneficial, but only if they are modified to second or third generation agreements that include any number of the following range of benefits/concessions:

a) higher compensation to governments for access;

b) efforts to ensure that compensation is channelled toward improved fisheries management;

c) the inclusion in the agreements of commitments to process a higher proportion of fish caught in national waters within the country;

d) greater market access for coastal state fisheries exports;

e) mechanisms to promote joint ventures between European fishing/distribution companies and coastal state fishers, processors or exporters.

However, some groups worry that second and third generation agreements, like their first generation counterparts, may still undermine efforts to increase local employment and conserve fish stocks (Godelman, 1997). In particular, there are concerns that vessel transfers and joint ventures could continue the export of Europe's overcapacity to developing countries and threaten small-scale fisheries vital for local livelihoods (CFFA, 1996:1, Godelman, 1997).

Conclusion

This case study has illustrated some of the problems posed by a particular kind of trade in fisheries services. It has highlighted how subsidies can cause overfishing, and how this in turn has adverse effects on sustainable development by limiting artisanal access to fisheries resources and depleting fish stocks. This case study once again raises once again the problems of inadequate or unapplied management regimes, and the necessity of scrutinising the explicit and implicit subsidies embedded in fishing access agreements and the threat they pose to the sustainable use of fishery resources. While trade in fisheries services can be valuable in some instances, it is clear that this kind of trade should be carefully monitored to assess whether the expansion of such trade really serves local sustainable development needs.

Chapter IV Highlights

This chapter has offered a range of different perspectives on international trade in fish, fish products and fisheries services. It has highlighted the potential for both synergies and for tensions between international trade, effective resource management, and sustainable development concerns.

This chapter has noted the potential for synergies between international trade and sustainable fisheries, for example, if trade brings financial resources that are used by a country to implement sustainable management programmes. The Chapter has also discussed the linkages between trade and development objectives. It emphasised the importance of fisheries exports to many developing countries both for employment and the generation of foreign exchange. It also noted the particular challenges that tariff escalation and also strict or changing sanitary, phytosanitary or technical standards can pose to developing countries efforts to export fish or fish products. It has also noted the role that trade and aid provisions in favour of developing countries can play in stimulating sustainable fishery policies.

Finally, this chapter reviewed various concerns about the potential negative impacts of international trade in fish products and services, such as degradation of fish stocks and the marine environment, and threats to food security, local employment and traditions. This Chapter reminds us that international trade may have negative environmental impacts if it increases demand for and harvesting of fish from stocks that are not effectively managed. The two case studies provided illustration of such tensions and the role that trade measures could have to play in improving sustainability.

V. Trade-Related Policies for the Fisheries Crisis

As highlighted earlier in this paper, strong fisheries management regimes are essential for achieving sustainable fisheries, maintaining economic returns to communities, food security and conserving marine ecosystems, regardless of trade policies. However, in the absence of adequate management regimes, it may be possible to employ trade instruments and polices to support sustainable fisheries management and to strengthen international fisheries and environment regimes. Furthermore, some elements of current trade policy may interfere with achieving sustainable fisheries and foreclose important economic opportunities for developing countries. These deserve examination, and the impacts of possible modifications should be considered.

For many countries, the expansion of trade and trade liberalisation in the fisheries sector remains high on the agenda. For this reason, the Members of the World Trade Organisation are considering whether to include further trade liberalisation of the fisheries sector in its next negotiating round. The key question for policy-makers is: what kind of trade policy is appropriate for a sector where there is clear evidence of resource mismanagement?

At the March 1999 WTO High Level Symposia on Trade and Environment, several governments and many NGOs argued for an environmental assessment of previous and/or future trade liberalisation efforts (WWF, 1999, United States of America, 1999:2)[66]. There have also been calls for social assessments. Given what we know about resource mismanagement in the fisheries sector, this chapter begins by considering the impacts of trade liberalisation in the fisheries sector. The objective of this chapter is not to offer a comprehensive assessment or verdict on trade or trade liberalisation. While a worthy task, it would involve rigorous and lengthy economic analysis that is beyond the scope of this study. The objective here is to lay the groundwork for future discussions and research by setting out different perspectives on the economic, social and environmental impacts of different trade liberalisation policies.

The four policy areas explored in this chapter are:

- Reductions in tariffs (tariff liberalisation);
- Reductions in subsidies to the fisheries sector;
- The use of trade-related environmental measures to regulate trade and strengthen fisheries and environmental management systems
- Demand side measures (eco-labelling and consumer boycotts).

In discussing the relevance of each these policies to the international trade regimes, the chapter focuses on the World Trade Organization rather than regional trade arrangements. Nonetheless, the handling of fisheries and trade issues in these regional fora deserves greater future consideration. The question of why environment concerns in general have not always featured prominently in the deliberations of these fora is also worthy of further exploration.

1. Efforts to Reduce Tariffs and Quotas

A key tool that governments use to liberalise trade is the reduction of tariffs imposed on imports of particular products. Related efforts include the elimination of the use of quantity restraints and/or the tariffication of quotas on imports (as tariffs are usually considered less trade distortionary than quotas).

The rationale for liberalisation of tariffs and quotas in the fisheries sector is to facilitate more trade and, as such, to benefit from:

- Increased access to markets
- Increased production and employment opportunities
- Reduced prices for consumers
- Increased range of choice available to consumers.

As noted in Chapter IV, just as international trade in fisheries products can generate significant benefits, it can also generate environmental and social problems. Building on that trade analysis, this section provides an overview of perspectives on the environmental and social implications of trade liberalisation, with an emphasis on developing countries. Given that the environmental and socio-economic case for liberalisation generally repeats that made for trade in general which has already been reviewed in Chapters I and IV, this section focuses more on presenting the various concerns, rather than opportunities, associated with liberalisation.

Environmental Perspectives on Liberalisation

In an ideal world, fisheries would be subject to effective management regimes, including conservation regulations and incentives for responsible fishing that would ensure that fishing is kept at a level consistent with productive fisheries and healthy marine ecosystems. In such a world, the economic incentives and pressures that trade liberalisation can stimulate, would be limited by regulations, and channeled productively so as to prevent over-exploitation and destructive fishing.

In the real world, management of fisheries has been notoriously ineffective in many instances. Moreover, national and international progress on trade expansion and liberalisation outpaces progress on fisheries management and the articulation of sustainable development strategies. Significant efforts have already been made under the Uruguay Round of the GATT to reduce tariffs in the fisheries sector, and several countries support further tariff reductions (See Table 5 for current tariff rates for selected goods and Box 11 on trade liberalisation in the fisheries sector under the Uruguay Round).

Given the frequent absence of policies to ensure that prices of fish and fish products reflect their full environmental costs, tariff liberalisation could fuel unsustainable "scale effects" in terms of harvesting and production in the fisheries sector. Here it is important to be aware that tariff levels vary between countries and products, and the environment effects of liberalisation will vary depending on what products are liberalised (See Table 5). It may be that for fisheries products where current tariffs are relatively low (such as the 1 percent or 2 percent tariff) the impacts of future liberalisation may not be significant. It may lead some countries to switch production for domestic markets to production for export, or shift exports from one country toward the U.S. where returns would now be higher without motivating any overall increase in production (e.g., trade diversion).

On the other hand, if a country were to significantly reduce current high tariff rates of 20 percent or 30 percent on many fisheries products, this could lead other countries to increase production to take advantage of these new export opportunities (e.g. trade creation). This could produce damaging environmental and social impacts, particularly if tariff reductions applied to species that are badly managed. Tariff reductions could also lead to lower consumer prices which, in turn, could increase demand for fishery products and, again, motivate higher fishing effort (as fishers try to maintain revenues by increasing the volume of fish sold). Even in instances where the return to fishers for a particular fish product increases (due to the possible willingness of foreign consumers to pay higher prices than domestic consumers for certain quality fish products) fishers may also have incentives to fish more to make even higher profits.

In countries where fisheries management regimes do not adequately control fishing effort or encourage the internalisation of costs, trade liberalisation may increase fish harvesting, exacerbate overexploitation of fish stocks, motivate increased investment in productive capacity, and encourage more use of practices which are ecologically detrimental (Sen, 1994:116-118)[67]. In the long-run it is possible that the overall production of fisheries products may actually decrease over time, because stocks would become overexploited and thus yield lower catches.

On the other hand, it is important to note potential synergies between environment and trade liberalisation. The liberalisation of trade could provides countries greater access to environmentally friendly fishing technologies. In some cases, where export opportunities increase national income, this revenue could be channeled toward the improved management of fisheries and marine biodiversity. Liberalisation of trade in fisheries products could also lead to lower rate of exploitation of fish stocks and thus reduced pressures on the marine environment. For instance, if processed goods from developing countries had greater access to markets, some effort would be diverted away from fishing and toward adding value to the fish catch through processing. It is possible, however that if a country had access to sufficient financial resources, it could increase both fish harvesting and processing activities.

While there are some country studies that consider economic impacts of trade liberalisation on the fisheries sector, only a handful of country studies examine the impacts of trade factors on fish stocks and the marine environment (Stone et al, 1999; Bhattacharya et al, 1998; IUCN, 1999a and 1999b; Johannes & Riepen, 1995; Saine, 1998; Diop, 1998; SAMB, 1998; IUCN, 1999). There has not been a comprehensive attempt to assess the impact of the implementation of Uruguay Round tariff reductions on international trade flows, or on fish stocks and marine ecosystems. In 1994, a study by the WTO's secretariat

forecast that tariff reductions under the Uruguay Round would increase the volume of international trade in fish and fish products by between 12.9 percent and 13.5 percent (WTO, 1997:26, GATT, 1994). However, this forecast does not convey any information about predicted impacts on the production levels of particular fish stocks or the marine environment.

Social Perspectives on Liberalisation

In Agenda 21, countries articulated a commitment to developing and increasing "the potential of marine living resource to meet human needs, as well social economic and development goals". In situations where trade liberalisation were to motivate over-exploitation of fisheries, progress toward social and economic goals could be thwarted. Trade liberalisation and stock depletion can, for example, result in the loss of employment opportunities important to local people and compromise food security goals.

A corollary of reductions in tariffs that applies to both developed and developing countries is structural change in the world's fisheries industry whereby even though some groups gain, others may find their skills or equipment obsolete. The potential social costs of trade liberalisation to developing countries are similar to those outlined in Chapter IV with respect to trade in general (these included threats to food security, fish stocks in fisheries important to local livelihoods, and, in some cases, pressures on local cultures and traditions).

Liberalisation can also generate concerns in developed countries. The costs to developed countries of reducing tariff escalation could be greater competition and, in some instances, loss of competitiveness, in processed fishery products. For example, a developed country which imports fish, but produces some of its own, may find that its domestic fishing industry suffers in the face of expanded imports due to tariff liberalisation. If the price of domestically produced fish is depressed by imports, this is likely to reduce wages, rents to equipment and even jobs with heavy impacts on some fishing communities. This explains why the domestic fishing industry is "typically a vehement opponent of free trade in fish, arguing for tariff protection, import quotas, or other barriers to trade" (Hannesson, 1998:3).

Liberalisation and Developing Countries

For developing countries, the issue of tariff liberalisation has particular implications. As noted in Chapter IV, developing countries have consistently voiced concerns that the structure of international trade is biased against them, and in particular about constraints on market access for their products. For many developing countries, trade liberalisation offers possibilities for addressing declining terms of trade, tariff escalation and other forms of protectionism in developing countries.

Tariff reductions can increase market access of developing countries, particularly if tariffs on processed fishery products are reduced. Despite liberalisation efforts during the Uruguay Round, many fishery products are still subject to detrimentally high tariffs and the governments of many developing countries would have liked to see further liberalisation efforts by developed countries (FAO, 1998b:2)[68].

In particular, tariff escalation continues to limit the exports of processed commodities from developing to developed countries. For example, the Uruguay Round of trade negotiations kep tariff measures by the European Union on the same level for most value-added, processed products from developing countries (FAO, 1998b:2). Similarly, US import duties remain high on some goods depending on the degree of processing. A related concern for developing countries is the effective rate of protection. In most developed countries, tariffs vary significantly depending on the type of product – tariffs applied to unprocessed products are lower than tariffs on semi-processed and processed products (Sen, 1994:115). This can mean that the effective rate of protection for some products that developing countries would like to export can be far higher than the nominal tariff indicates[69]. For example, the difference in nominal tariff between fresh cod and cod fillets may be 10 percent, but the effective rate of protection after taking into account weight loss and other factors might be 43 to 52 percent (Sen, 1994:115).

"Tariff escalation" is a major concern for developing countries because it can constrain their efforts to export unprocessed fisheries products to diversify their export structures (e.g., by exploiting their comparative cost advantage in greater value-added activities such as processed fishery products) (Sen, 1994:115-116). This leads to economic losses in both exporting and importing

countries (Sen, 1994:115-6). Moreover, tariff escalation can perpetuate the over-use of fisheries resources by some countries. A note by the WTO Secretariat explains that, "[h]igher tariff rates applied to semi-processed or processed fish products induce allocative inefficiencies both in the country imposing the tariffs, and in the exporting countries. From a global perspective, these inefficiencies have resulted in a larger absolute quantity of unprocessed fish being exploited to produce the same volume of processed fish" (WTO, 1997:26).

The latter point rests on an assumption that countries have particular foreign exchange targets and will export whatever is necessary to meet those targets[70]. The logic is that in order to maximise their fish exports and their foreign exchange receipts, developing countries export a greater quantity of unprocessed product to achieve a similar level of earnings as the export of processed, or value-added product would provide (Sen, 1994:115).

Significant benefits from the reduction or elimination of tariff escalation could accrue to developing countries and the environment. Developing countries could potentially gain greater market access for fishery products, long term increases in fisheries processing activities and exports and greater economic returns. The removal of protection could also have positive impacts on developed countries. Reductions in tariff escalation and other forms of protection to the fish processing industry in developed countries, could lower the price and increase the variety of fish products available for consumers. It could also free government resources and private capital for other productive and employment-generating purposes.

It is possible, however, that non-tariff measures such as health and environmental regulations in importing countries may offset increases in market access through tariff reductions. It is also important to bear in mind that trade liberalisation can still pose challenges for developing countries. First, it is important to take into account the special situation and needs of developing, particularly with respect to food security, economic development and income generation. Many developing countries are anxious to open their own market gradually to, for example, imports of fisheries products and services. While in the long run, there may be some efficiency and distributional gains to be made from opening their markets to foreign imports, in the shorter term, many developing countries would prefer to proceed with trade liberalisation at pace that they believe is consistent with other development objectives such as efforts to develop local economies and opportunities.

Second, multilateral reductions in all tariffs can erode the benefits that some developing countries extract from preferential trading agreements. Preferential agreements such as the Generalised System of Preferences (GSP) or the Lom Convention (Lome IV) signed between the European Union and 69 developing countries from Africa, the Caribbean, and the Pacific (ACP) were intended to enhance the competitiveness of developing countries exporting fish by providing lower tariff rates. However, when general tariff reductions are granted to all trading partners, potential gains to developing countries from expected expansion in world trade may be offset or lost due to increased competition in international markets and erosion of existing preferential tariffs (FAO, 1995).

In conclusion, it is clear that there is a strong need for careful, systematic, assessment of the environmental and socio-economic impacts of past and future tariff liberalisation efforts.

A comprehensive assessment of tariff liberalisation should focus on:

- Improving understanding of the determination of prices of fishery products and the influence of tariffs on consumers prices and thus demand.
- Examining the effect of tariff liberalisation on consumption, investment and production decisions in the fisheries sector;
- Estimating results of different tariff liberalisation strategies and their effects in terms of trade diversion or trade creation;
- Assessing the impacts of tariff liberalisation on the status of fish stocks that enter into international trade, on surrounding ecosystems, and on food security and employment. Research should also focus on stocks that may not represent a small portion of overall trade but where a high proportion of the catch is traded and on stocks that are already known to be suffering from unsustainable harvest rates.
- Isolating the impacts of tariff liberalisation from impacts of other factors that can influence international trade patterns and flows. Fluctuations in economic growth rates, exchange rates, population, national debt levels and tastes as well as exogenous

events such as the Asian economic crisis, El Niño and the financial crash in Brazil are all factors that could outweigh or balance increases in incentives for production or consumption of particular products due to lower tariffs.

Until such an assessment is undertaken and given the international requirement for precautionary approaches to policy measures that may negatively impact sustainability objectives, there is a compelling case for caution when it comes to liberalisation of tariffs on unprocessed goods in the fisheries sector.

Table 5. Tariff Rates on Selected Fishery Products[71]

	E.U.	Japan	U.S.
Live Fish			
Freshwater Ornamental Fish	free	–	0
Saltwater Ornamental Fish	7.5	–	0
Carp and Goldfish	–	3.5	–
Other Ornamental Fish	–	1.7	–
Fresh or Chilled Fish (no fillets)			
Yellowfin Tunas	22	3.5	0
Albacore or Long-finned Tunas	22	3.5	0
Skipjack or Stripe-bellied Bonito	22	3.5	0
Pacific, Atlantic & Danube Salmon	2	3.5	0
Herrings[72]	15	–	0
Haddock	7.5	3.5	0
Mackerel[73]	20	–	0
Dogfish and other Sharks	6	2.5	0.2c/kg
Frozen Fish (no fish fillets)			
Pacific, Atlantic & Danube Salmon	2	3.5	0
Haddock	7.5	3.5	0
Herrings	15	–	0
Dogfish	6	2.5	1.1 c/kg
Fish Fillets and other Fish Meat, Fresh, Chilled or Frozen			
Fresh or Chilled Cod	18	–	0.8 c/kg
Frozen Cod & Haddock fillets	7.5	3.5	0
Dried, Salted or Smoked Fish Fillets of Herring (dried, salted or in brine)	12	–	4
Fillets of Mackerel (dried, salted or in brine)	20	–	5
Smoked Salmon	13	10.5	5
Prepared or Preserved Fish (whole or in pieces but not minced)			
Salmon, (in oil, in airtight containers)	5.5	9.6	7.3
Herrings (in oil, in airtight containers)	20	9.6	4.8
Sardines (in oil, in airtight containers)	12.5	9.6	0.8
Tunas (in oil, in airtight containers)	24	9.6	35%
Mackerel fillets	25	9.6	3.6
Crustaceans and Molluscs			
Frozen, Fresh or Chilled Shrimp and Prawns[74]	12	1	0
Shrimps and Prawns (prepared or preserved)	20	4.8	6

Box 11. Trade Liberalisation and the Uruguay Round

To date, the most significant tariff reduction efforts in the fisheries sector occurred under the umbrella of the Uruguay Round of GATT negotiations.

Average most favoured nation (MFN) tariffs for the three main importing markets were reduced to 4.1 percent for Japan (28.6 percent cut), 10.7 percent for the European Union (17.4 percent cut) and 0.9 percent for the USA (20.6 percent cut) (FAO, 1995c). In particular, Japan, the European Union and the United States reduced their tariffs for specific products originating from other OECD trading partners which is likely translating into greater trade in fishery products between OECD member counties. Some developing countries are likely benefiting from reduced trade barriers, increased access to markets, and lower tariffs on their imports of raw fish materials for processing. Developing countries and economies in transition for their part decreased their average MFN tariff from 35.2 percent to 8.1 percent (a 76.9 percent cut) (FAO, 1995c)[75]. Overall, imports benefiting from duty-free rates increased from 21 percent to 24 percent from all sources and from 19 to 20 percent from developing countries.

Source (for data on tariff liberalisation): FAO (1995c)

2. Efforts to Reduce Subsidies

Subsidies are estimated to account for 20-25 percent of the annual revenues of the commercial fishing industry with a cost of between US$16 and US$54 billion a year to taxpayers world-wide (depending on the method used for calculating subsidies)[76]. These subsidies to domestic fishing sectors can be an important cause of overfishing and overcapacity. They have been blamed for:

- Inflating returns to the fishing industry and thus altering behaviour of fishers;
- Encouraging above normal rates of exploitation of fisheries resources;
- Fuelling the expansion of global fishing fleets (Weber, 1997);
- Financing the global problem of over-capacity of fishing fleets (and, in particular, distant water fishing nations) and the excessive use of environmentally damaging technologies (Weber, 1997); and
- Facilitating competition for space and resources especially between developed and developing countries, but also within developing countries. (It is important to note that some existing subsidies in developing countries, such as Thailand, Senegal, South Africa and Ghana, go to the large scale fleets which can pose a threat to the artisanal sector (e.g., some artisanal fishing communities face competition from environmentally destructive trawling operations) (ICSF, 1998b)).

Subsidies can also have distortionary effects on international trade flows (Schorr, 1998; Myers, 1998; Munro, 1997:4; WTO, 1997). While the absolute magnitude and relative scale of fishery subsidies suggests they must have significant impacts on the international market, the 'trade' consequences of fishery subsidies are not well documented and in some senses speculative (Schorr, 1998:149)[77].

Subsidies to the fisheries sector may be categorised according to the type of instrument used. In the broadest sense of the word, trade measures can be considered subsidies as they can directly influence the domestic prices received by producers (Porter, 1998). In this section, however, the discussion of subsidies focuses on domestic actions to increase the income or reduce the costs of production for industry.

Several governments are optimistic that efforts to liberalise trade by removing subsidies can demonstrate the possibility of synergy between trade, development and environment objectives (WTO, 1997; New Zealand, 1997; United States, 1997; Commission on Sustainable Development)[78]. Moreover, there are calls to use existing or modified international trade rules to assist in the task of subsidies reduction.

Efforts to reduce subsidies could have several positive impacts in terms conservation and sustainable development objectives. The reduction of subsidies could:

- Reduce the pressure on fisheries resources by eliminating programmes that enhance the capacity and size of fishing fleets, and otherwise reduce the cost of fishing;
- Enhance export opportunities for countries currently shut out of export markets due to subsidised competition;

- Provide greater opportunities for domestic fisheries industries in developing countries by reducing subsidies to foreign distant water fleets.

While the elimination of capacity enhancing subsidies can provide environmental benefits, the issue is more complex. Some subsidies are considered vital from either a conservation and sustainable development perspective which makes proposals to "liberalise" controversial.

On the conservation point, it is important to bear in mind that the removal of subsidies is a necessary but not sufficient condition for sustainable fisheries – efforts to improve management of fisheries and marine ecosystems, fully internalise costs, and reduce existing capacity would still be required. Some countries, such as New Zealand (1998), argue that all subsidies encourage unsustainable fishing practices and are directly or indirectly both trade distortionary and environmentally damaging. Others argue that subsidies are not, by definition, dangerous for the environment. They argue that there are also some subsidies that may help promote a transition to sustainable fisheries such as those aimed at retraining fishworkers, enhancing fish stocks, or encouraging environmentally responsible fishing techniques. Some fisheries managers also argue for subsidies for programmes to reduce fishing capacity and effort such as vessel fishing-license buy-backs and de-commissioning of boats[79].

On the socio-economic front, some subsidies are important, particularly in developing countries, to efforts to build local fishing fleets and provide employment, food and livelihoods for poor, coastal communities. There are also social situations, like civil war (as in Mozambique) or famine (as in Senegal) where temporary subsidies may be warranted to "help coastal populations overcome unexpected vagaries" (ICSF, 1998b:1). In addition, the general argument against subsidies assumes that all stocks are affected by excess (subsidised) capacity and are generally depleted. While this may be true at the global level, in several, countries, especially in the Indian Ocean region, resource may not be overfished (ICSF, 1998b). A sustainable development perspective highlights that efforts to reduce subsidies will also require close attention to the livelihood and development needs of fishing communities, both in developed and developing countries.

A related consideration is the political pressure that governments in both North and South face to protect employment opportunities in the fisheries sector. Opposition from fishing communities with employment concerns has stymied required action against subsidies in many countries. There is, however, growing recognition that the time has come for governments to take on these challenges, particularly in countries where, with sufficient political will, alternative employment opportunities and financial support schemes could be developed.

The environmental and trade benefits of removing subsidies in the fisheries sector has been taken up by the WTO, the FAO, the OECD, APEC, UNEP, and WWF among others (Porter, 1998b:10)[80]. At a recent meeting of the FAO's Committee on Fisheries (COFI), governments adopted a Plan of Action for the Management of Fishing Capacity, which calls for action "to reduce and eliminate all factors, including subsidies, that contribute directly or indirectly, to the build-up of excess fishing capacity thereby undermining the sustainability of marine living resources, giving due regard to the needs of artisanal fisheries" (FAO, 1999a). Furthermore, the March 1999 WTO High-Level Symposia on Trade and Environment, Australia, Iceland, New Zealand, the Philippines and the United States of America collectively urged Governments to make an early commitment to progressively eliminate fisheries subsidies that contribute to fisheries overcapacity (Joint Statement, 1999:2).

While these statements contribute to a body of emerging international norms on the use of subsidies, outstanding disagreements about which sorts of subsidies are offensive have prevented the development of new, specific, binding obligations to reduce harmful fishery subsidies. Since 1994, fishery subsidies have been subject to the control of the WTO Subsidies Agreement, negotiated as part of the 1994 Uruguay Round multilateral trade agreement, but "left out of any framework for their specific control and reduction" (Schorr, 1998:150)[81]. Listed below are six different options that have been proposed to advance the reform of subsidies by national governments (Schorr, 1999; Porter; 1998b). (See Box 11 for an outline of the WTO's existing provisions).

- **Making various modifications to the WTO system,** including: a) modifications of the WTO Subsidies Agreement to ensure that all capacity inducing subsidies are covered by the agreement), b) incorporation of fishery subsidies into an expanded Agreement on Agriculture, or c) negotiation of a

new WTO sectoral fisheries agreement that includes provision on subsidies (Porter, 1998b:69; Schorr, 1998). Such negotiations could be informed by recommendations from the WTO Committee on Trade and Environment, the FAO, UNCTAD and the OECD regarding precisely which fisheries subsidies should be addressed (For a brief overview of the WTO's rules regarding subsidies see Box 12);

- **Incorporating new subsidy disciplines into new or existing regional trade agreements;**
- **Incorporating new disciplines into new or existing regional fishery management agreements;**
- **Negotiating a new, free-standing global agreement which would build on existing international co-operation and commitment to reduce fishing overcapacity to sustainable levels.** The FAO could, for example, negotiate a binding agreement on the issue of fishing subsidies in partnership with the WTO (Porter, 1998b:7);
- **Adding a protocol to an existing global environmental treaty such as the Convention on Biological Diversity (CBD) or the Straddling Stocks Agreement.** The latter has a specific provision calling on countries to take measures to eliminate overfishing and overcapacity, but it has no provisions for adopting protocols to the Convention. While there is the possibility of calling for a review conference, there is no periodic Conference of the Parties to the Agreement at which the issue of a subsidies agreement could be raised (Porter, 1998b:70). The CBD on the other hand "is less closely focused on overcapacity and overfishing", but it lends itself "more easily than the straddling stocks convention [sic] to additional protocols" (Porter, 1998b:71)[82]; or
- **Taking a "multi-faceted" approach through parallel and co-ordinated developments in multiple international fora.**

Box 12. The WTO Agreement on Subsidies and Countervailing Measures (Subsidies Agreement)

The Subsidies Agreement places restrictions on the power of WTO Member governments to provide subsidies to industry. It defines a subsidy broadly to include the conferral of a benefit to industry resulting from a financial contribution by a government or any public body within a Member's territory involving: direct transfer of funds, foregone government revenues (such as tax credits), provision of goods or services other than general infrastructure, purchases of goods, or provision of income or price support as provided under Article XVI of the GATT. Such activities are also covered if the government arranges for them to be carried out by a funding mechanism or private body.

If a subsidy is "actionable" as defined under the Agreement, it can be challenged by another Member through the WTO dispute resolution procedure. To be actionable, a subsidy must be "specific". A subsidy is specific if it is made available only to a certain enterprise or industry or group of enterprises or industries within the jurisdiction of the granting authority. In addition, to be actionable, a subsidy must injure another Member's domestic industry, cause that Member serious prejudice, or nullify or impair benefits to that Member under the GATT[83].

The Subsidies Agreement creates a narrow window for Members to provide certain types of subsidies, within strictly defined limitations, for adaptation of existing facilities to new environmental requirements, if they notify other Members of the existence of the subsidies (Article 8.2(c)). All multilateral subsidies disciplines, except for agricultural subsidies (which are covered by the Uruguay Round Agreement on Agriculture) are covered by the WTO's Agreement on Subsidies and Countervailing Duties.

Source: WTO (1994) and Downes (1999).

In the meantime, the provisions of the WTO Subsidies Agreement already appear to prohibit practices that many WTO Members currently use to subsidise their fishing fleets (Downes and Van Dyke, 1998:3; Schorr, 1998) (See Box 11). However, to date, the requirement to notify other countries of such subsidies and to curtail offending ones, has been widely ignored. It has been argued that a good starting point for subsidies reform would be for countries to apply and comply with existing WTO rules (Schorr, 1998). Countries which maintain such environmentally damaging policies would then know that they risk having their policies challenged.

The subsidies implicit in bilateral agreements pose slightly different challenges. They are difficult for the international community to address because these agreements are entered into voluntarily by countries. As noted in the case study on Euro-African agreements, fishing agreements can lead to unfair competition against coastal fishing fleets, place excessive stress on fishing resources, or undercompensate coastal States for access to their resources. However, there may also be instances where problems of too much pressure on resources or competition with local fishing fleets do not hold. Moreover, in cases of excessive pressure on resources, the reduction of foreign fleet may not be the end of the story. Overfishing by foreign fleets may simply be replaced by overfishing by local industrial fishing fleets.

Proposals for the reform of fishing agreements, and subsidies within, them include:

- **Challenging certain fishing agreements as violations of the WTO Subsidies Agreement** and/or amending the definition of subsidies provided by the WTO Subsidies Agreement to explicitly include the kinds of subsidies provided through arrangements like the Euro-African fishing agreements (Porter, 1998);
- **Developing a new international agreement on fishing subsidies** that explicitly refers to fishing access agreements and includes provisions prohibiting the payment by governments of any part of the costs of access to fishery resource. For countries that are reluctant to forfeit payments for access, efforts may need to be taken to increase the percentage of the commercial value of the actual catch that is levied on foreign fishing vessels;
- **Increasing international assistance** for establishment of region-wide surveillance/monitoring capability to enhance the management capacity of coastal States involved in fishing agreements (Acheampong, 1996; CFFA, 1996; deVries, 1996; WWF, 1996);
- **Implementing programmes to expand alternative employment opportunities** and reduce the debt of DWFN fishing fleets in order to reduce the pressure on DWFN governments to negotiate access agreements for their fleets;
- **Providing developing country fishing States with technical, institutional, and financial support** to encourage their adoption of a joint negotiating stance in order to improve the terms of access agreements with DWFNs (Porter, 1998a). By negotiating collectively, the South Pacific countries of the Forum Fisheries Agency have, for example, successfully improved the terms of agreement for DWFN access to their fishery resources (McGinn, 1998b:48). However, that region has a unique situation of shared fish stocks such that each country has a self-interest in ensuring access to common fish stocks. The possibility of joint negotiating stances will depend on where fish are found and to what extent they are shared among States;
- **Negotiating second or third generation fishing agreements.** Countries like Morocco and Argentina already have so-called second generation agreements which focus on joint ventures by enterprises in the two countries and the transfer of appropriate technology to develop the capacity of the local population to exploit their own fisheries resources (Chaytor, 1999:5; Godelman, 1998; Acheampong, 1997).

Two key steps that would clearly facilitate discussion of the subsidies issue are: a) improved transparency and monitoring of the size and forms of fisheries subsidies and b) international efforts to develop formulas that distinguish between subsidies that are capacity enhancing or reducing and that balance norms for responsible fishing behaviour with sustainable development objectives such as local employment and food security needs.

3. The Use of Trade Measures to Strengthen International Environmental and Fisheries Management Regimes

At the international level, tariffs, import quotas or other trade measures are often the strongest tool available to address environmental problems. Given the particular management difficulties faced by the fisheries sector, the inadequacy of existing efforts to internalise costs, and the political difficulties with addressing this situation, trade measures can be a valuable option for conservation and improved fisheries management.

The use of trade related environmental measures is grounded in a recognition of the need to use market incentives as well as regulation to achieve sustainability, and that such incentives may not be provided by the usual functioning of the international trade system.

The Rationale for the Use of Trade Measure

There are several rationale for the use of trade-related environment measures:

- **To restrict trade when trade flows themselves are considered major contributors to an environmental problem.** Tools used to implement trade-related environment measures can include export or import bans, quotas, quantity restrictions and conditions and tariffs. In the fisheries sector, non tariff measures have been used to restrict trade flow where potential imports do not comply with product standards, labels, and/or regulations pertaining to health, hygiene, social or environmental criteria. For example, some countries prohibit imports of products that do not meet domestic phytosanitary standards to guard against the spread of invasive exotic species (See Box 13). CITES is another tool that is available to States when trade itself can be identified as a major threat to a species. CITES employs import bans and quantity restrictions (permits) to regulate international trade (See Box 14 for a full discussion of the CITES Agreement)[84].
- **To promote or compel compliance with environmental provisions included in MEAs or national regulations.** The logic behind these measures is not that the trade per se is the problem, but restrictions on trade can bring pressure to bear on foreign industries or countries to improve their environmental performance. Trade measures have been employed in some instances to limit imports of products which do not comply with an environmental requirement specified by the importing country or required by an MEA or RFMO. The latter could include regulations on fishing gear (such as requirements of turtle excluding devices) and harvesting methods (such as dolphin safe harvesting methods) and the minimum size of fish. In such instances, products are usually either outright banned from the market, or only allowed to enter when they meet a particular requirement or standard (OECD; 1997b). Other tools used can include quotas and tariffs.

Box 13. The WTO Agreement on Sanitary and Phytosanitary Measures (SPS Agreement)

The SPS Agreement establishes trade disciplines for regulations aimed at protecting human, animal and plant health within a WTO Member's territory from risks due to diseases, pests, disease-carrying organisms, and disease-causing organisms, as well as from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs. The SPS Agreement requires Members to "ensure that any sanitary or phytosanitary measure is applied only to the extent necessary to protect human, animal or plant life or health, [and] is based on scientific principles ... [and] sufficient scientific evidence" (Article 2.2). "In cases where relevant scientific evidence is insufficient, [however,] a Member may provisionally adopt [SPS] measures on the basis of available pertinent information, including that from the relevant international organisations as well as from [SPS] measures applied by other Members" (Article 5.7).

In addition, Members must ensure that their SPS measures are consistent with the non-discrimination principles of most-favoured nation and national treatment. Furthermore, SPS measures "shall not be applied in a manner which would constitute a disguised restriction on international trade" (Article 2.3). Measures that "conform to" international standards are presumed to be consistent with the SPS Agreement and the GATT (Article 3.2).

An example of trade measures to promote compliance with national regulations is provided by the United States Marine Mammal Act. This Act offers the possibility of imports bans on "commercial fish or products from fish which have been caught with commercial fishing technology which results in the incidental kill or incidental injury of ocean mammals in excess of United States standards" (Blackhurst, 1993:330).

Trade measures also form part of a broad package or menu of policy approaches that MEAs use to build co-operative solutions to reduce particular environmental risks (UNEP, 1998). Trade measures have been used several times in MEAs. The Montreal Protocol, the Basel Convention, the UN Agreement on Straddling Stocks and Highly Migratory Fish Stocks and CITES (Vaughan & Delavi, 1998) all include provisions for trade measures[85]. Many fishing nations are also supportive of using trade measures to enforce provisions of widely supported multilateral fisheries agreements. An example of trade measures used to promote compliance with a fishing agreement is provided by ICCAT. ICCAT members have passed a recommendation that extends penalties, and, if necessary trade restrictive measures on member States that do not comply with catch limits essential to the conservation of both Atlantic bluefin tuna and north Atlantic swordfish (ICCAT, 1996). (See case study on Bluefin Tuna in Chapter IV.)[86] The use of such tools by MEAs usually follows other efforts to persuade countries to co-operate with the objectives of MEAS. Furthermore, the use of trade measures to address ongoing problems of illegal, unregulated and unreported fishing (IUU) was recently proposed by Australia[87].

- **Another possible, but controversial, use of trade measures is to punish non-compliance and/or to compel compliance with environmental provisions.** This involves the imposition of punitive trade sanctions on any range of imports from the country in question. Trade sanctions are bans or restrictions placed on products other than the particular product which does not comply with the environmental requirement specified by the importing country (OECD, 1997b). This approach is different to the temporary suspension of trading rights for particular products that invoked in connection with non-compliance cases.
  Currently, there is at least one important instance in which national legislation allows for trade sanctions that affect unrelated products (Blackhurst, 1995:330). In the United States, the Pelly Amendment to the Fishermen's Protective Act of 1967 states that the President may '"prohibit the bringing or importation in to the United States of any products from the offending nation for any duration as the President determines appropriate and to the extent that such prohibition is sanctioned by the GATT" (Blackhurst, 1995:330). The Amendment can be enacted when it has been determined that a country is violating an international fishery or endangered or threatened species programme[88]. To date, trade provisions in existing MEAS are applicable only to the products directly related to the environmental problem which the particular MEA is intended to address (i.e., to date, no trade sanctions have been implemented) (Blackhurst, 1995:330). In general there is a view within MEAs that non-compliance is a problem to be solved (through, for example, the provision of financial and technical assistance) rather than punished.
- **To promote public awareness.** Trade measures are sometimes promoted as a way to raise public awareness. The underlying goal may be to sensitise the public of the general need to reduce unsustainable production and consumption patterns. The specific goal might be to raise public awareness about the relationship of consumer choices on particular environmental concerns or simply to draw attention to a particular environmental threat (such as tropical forest degradation or the conservation of dolphins) (Downes and Van Dyke, 1998:3; Pearson, 1998:10-34)[89].

Some trade measures serve a dual purpose. For example, in recognition of the problem of trade in unreported, illegally harvested Patagonian toothfish, the Parties to the 1980 Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) have agreed on measures that attempt to both remove trade in illegally caught Patagonian toothfish and improve compliance with CCAMLR rules. CCAMLR will restrict trade flows by requiring that imports must be accompanied by a valid certificate origin.

Box 14. The Potential of CITES

The Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES). CITES provides an important policy tool for regulating trade where trade itself is a threat to particular species. CITES already regulates trade in some endangered marine species (such as sea turtles, marine mammals, mollusc, sturgeon and corals). The potential role of CITES in the fisheries sector is increasing as the scientific necessity of listing certain fish species grows closer. In recent years, there have been calls for CITES to regulate certain commercially valuable species of fish such as bluefin tuna, patagonian toothfish and orange roughy. There are also discussions of the merits of listing the great white shark and the dugong on CITES. Fish species listing proposals are likely to feature at the next CITES meeting in 2000.

If countries agree that a species is threatened with biological extinction and that it is, or may be, affected by trade, it can be listed under Appendix I of the Convention. Henceforth, no commercial international trade is permitted except under exceptional circumstance. Trade is defined in the Convention as "export, re-export, import and introduction from the sea". Introduction from the sea is defined to mean "transportation into a State of specimens of any species which were taken in the marine environment not under the jurisdiction of any state" (McIlgorm, 1999). In other words, an Appendix I listing could trigger prohibition on trade which involves taking marine species from areas outside national jurisdiction and transported into areas under national jurisdiction (McIlgorm, 1999:21). By itself, a listing under Appendix I does not prohibit the harvesting or domestic sale of a species.

If countries believe a species might become endangered if trade were not controlled and monitored, it could be listed under Appendix II of the Convention. Trade in Appendix II species requires an export permit from the country of origin, issued by the competent authority. If the species are exported from a country other than where they originated, a re-export permit is required. These determinations are to be made on the basis of scientific assessments of the biological status of the species.

CITES is different to many other trade measures as it does not restrict trade to sanction non-compliers or to punish free-riders. It limits trade because trade itself is or may be driving a species toward extinction. It is an 'emergency' mechanism for situations where management efforts have been so inadequate that a species is threatened. It constitutes a recognition that when trade itself is a problem, there are instances when there are no realistic alternatives to trade restrictions.

The appeal of CITES as a conservation policy tool is that its large memberships gives its decisions particular moral force and means that significant pressure can be brought to bear on member countries to abide by its decisions (Cox et al., 1997:6). CITES is also an attractive fora for deliberations on effective fisheries conservation measures as its membership include most nations significantly involved in the fishing sector. At the same time, the effectiveness of CITES and of using trade controls for species conservation, has been widely discussed (Burgess, 1994; Barbier, 1990). Experience to date indicates that banning trade does not necessarily create the best incentives for sustainable management of the species. There are, furthermore, cases where CITES may not be the most appropriate policy tool (e.g., where habitat loss is more damaging than harvesting, and where domestic consumption is more important than international demand).

While CITES has been applied to a wide range of species, it has not yet been used to control trade in commercially valuable fish stocks. To date, the Parties to CITES have been reluctant to proceed with the listing of commercially valuable species. In 1997, there was a proposal to establish a Marine Finfish working group to permit further discussion of these issues. This proposal was rejected by the Tenth Meeting of the Conference of the Parties. Proposals to accept amendments to the criteria for listing marine species on Appendices I and II to make listing easier were also rejected. Even where the scientific necessity of listing a particular species may be clear, given the economic stakes, the listing of commercial fish species may pose political challenges. The potential of CITES in the fisheries sector will depend on efforts to:

- Resolve divergent views on stock assessment and quota allocation. In this regard, CITES could draw on the advice and expertise of international organisations with experience and authority, such as IUCN's Species Survival Commission (which develops the IUCN Red Lists of Endangered Plants and Animals) and the TRAFFIC Network. In the past, for example, CITES

(continued)

Box 14. The Potential of CITES *(continued)*

deferred to the International Whaling Commission (IWC) and based its listing decisions on IWC decisions about whale harvesting.

- Resolve the issue of CITES criteria for listing marine species. At the 23rd meeting of the FAO Committee on Fisheries in February 1999, members advised that CITES should co-ordinate with the FAO to review criteria for listing marine species. This represents an area where the work of IUCN (particularly in the area of Red Listing of Endangered Species) could be better co-ordinated with that of CITES and the FAO.
- Ensure the participation and commitment of all countries involved in harvesting the species and the enforcement of bans, legislation, and adequate penalties[90].
- Clarify that CITES decisions on trade in commercially valuable species are not open to challenge in international trade fora such as the WTO.

As an MEA, a CITES ruling is unlikely to be challenged in any WTO fora. However, there may be instances where some countries feel that WTO rules regarding non-discrimination have been violated. It is possible, for example, that a country would object to a CITES decision to regulate trade in identical species coming from different populations of a species differently because the populations have different biological statuses (Downes, 1999:7). A formal statement from the WTO Members which confirms the understanding that decisions of MEAs such as CITES can not be challenged in the WTO could strengthen the confidence of CITES members in elaborating scientifically necessary trade restrictions.

Debates About Standards Some Trade Measures are Used to Defend

The use of trade measures is grounded in the principle that nations have sovereign power to set local standards deemed appropriate for the protection of health, safety, and the environment, and to police their own market and borders. In developed countries, many civil society groups are vocal on issues regarding national health, social and environmental standards. They staunchly defend the right and ability of national, state or local authorities to establish environmentally related technical regulations on products[91]. The political impetus for the use of trade measures may be to pacify a domestic environmental lobby, to protect a particular domestic industry from being undercut by foreign industries that do not face equally strict environment regulation, or to protect the domestic environment from unwanted environmental or health risks.

There is debate, however, about the legitimacy of the standards that trade measures should be used to defend and which authorities should have the power to develop them (See Box 15). Many countries have raised concerns about restrictions on their exports due to different standards imposed by foreign countries. Environment issues aside, developing countries have already raised concerns about new rules related to fish additives, food safety standards, and fish health and technical standards[92]. Developing countries have emphasised that the burden of complying with foreign product standards tends to fall disproportionately on small suppliers to the market for whom the cost of acquiring information about, and complying with, standards is relatively higher (Amjadi & Yeats, 1995; Gupta, 1997; Pearson, 1998:10-21)[93]. Moreover, oft-promised resources to help developing countries meet Northern product standards are often insufficient. For their part, developed countries can be reluctant to relieve the production costs of foreign industries that could later pose competitive challenges to domestic industries.

One response to these concerns is a call for greater international harmonisation of environmental standards to level the playing field. There is an argument that clear and transparent standards can actually enhance market access, particularly if the standards are similar across a series of countries. However, efforts aimed at harmonising standards across countries are often opposed, on the grounds that they could lead to a lowering of standards overall or yield standard setting authority to authorities that may not be sufficiently accountable, transparent or democratic.

It has also been argued that the diverse standards of different countries or regions can be warranted. First, economic, social and environmental conditions differ from country to another. Second, national preferences for

Box 15. The WTO and the Issue of Legitimate Standards

WTO Members negotiated an Agreement on Technical Barriers to Trade (TBT) to ensure that members do not use technical regulations or standards as disguised measures to protect domestic industries from foreign competition. The TBT is also intended to reduce the extent to which technical regulations and standards operate as barriers to market access, primarily by encouraging the development of international standards. International standards are expected to reduce the obstacles to international trade that can be created by the proliferation of numerous different standards and regulations in various countries.

The TBT Agreement distinguishes between technical regulations and standards. "Technical regulations" are defined as mandatory requirements for products or related process and production methods (PPMs). (Processes and production methods are defined as the way in which products are manufactured or processed and natural resources are extracted or harvested (OECD, 1997:7)). "Standards", in contrast, are defined as voluntary requirements for products or related process and production methods[94].

The rules of the TBT Agreement, including its Code of Good Practice for the Preparation, Adoption and Application of Standards (the Code of Good Practice), prohibit both regulations and standards from discriminating between domestic products and foreign products that are alike (the national treatment principle)[95] and between 'like products' from different WTO Members (the 'most-favoured-nation' principle). 'Like products' has been defined in past GATT and WTO dispute panel decisions to mean products with the same or similar physical characteristics or end uses[96]. The rules of the TBT also stipulate that Members shall ensure that technical regulations and standards do not create unnecessary obstacles to trade (TBT Article 2.2 and Annex 3).

In terms of technical regulations, States are required to ensure that technical regulations use international standards that already exist (or that are near completion), or relevant parts of them, as a basis for their technical regulations, except when the international standards would be an ineffective or inappropriate mans for the fulfillment of the regulations objectives[97]. In the case of technical regulations, if a regulation is applied in accordance with a relevant international standard, it is presumed not to create an unnecessary obstacle to trade (TBT Article 2.5)[98]. International standards that could be recognised by the TBT include those set by central government, local government or non-governmental standardizing bodies (Downes & Van Dyke, 1998:34).

In terms of standards, Members must ensure that standardizing schemes operated by national governmental or intergovernmental agencies accept and comply with the Code of Good Practice (TBT Article 4.1). The extent to which the Code of Good Practice applies to local government and non-governmental standardizing bodies depends on them accepting and complying with it (Appleton, 1997:123). However, Members are required to take such reasonable measures as may be available to them to ensure that local government and non-governmental standardizing bodies as well as regional standardizing bodies accept and comply with the Code of Good Practice, irrespective of whether or not those standardizing bodies have accepted it (TBT Article 4.1).

The Code of Good Practice's substantive provisions require a standardizing body to, inter alia, 1) adopt existing or imminent international standards, except where they would be ineffective or inappropriate, 2) make reasonable efforts to harmonise standards at the international level, and 3) make every effort to avoid duplication or overlap with the work of other standardizing bodies and achieve a national consensus on the standards they develop[99].

The TBT includes several specific provisions calling on all countries to ensure transparency in the development and application of standards and regulations in particular through the open dissemination of information about them[100]. It also calls on developed countries to recognize difficulties that developing countries may encounter in the formulation and application of technical regulations and standards, and to provide them advice and technical assistance for their endeavours in this regard (TBT, Article 11.). Developing country members are also to be provided differential and more favorable treatment given their special development, financial and trade needs (TBT, Article 12)[101].

The TBT and the Environment

As noted in Chapter I, the WTO Agreement clearly states that some trade restrictions in the interest of conservation and animal and plant health are permissible, even though they violate the general principles of the GATT. While the TBT Agreement does not contain an explicit environmental exception, its preamble contains language paralleling that found in Article XX of the GATT. The preamble of the TBT Agreement recognises that "no country should be prevented from taking measures necessary to ensure . . . the protection of human, animal or plant life or health, [or] of the environment . . . at the levels it considers appropriate."[102] In addition, Article 2.2 of the TBT Agreement provides that the "legitimate objectives" of technical regulations include " protection of human health or safety, animal or plant life or health, or the environment."[103]

environmental quality may differ substantially from country to country, particularly when compared to other national problems (such as the value placed on charismatic species like dolphins and turtles among some groups in developed countries). Third, what is appropriate in one set of circumstances may be inappropriate in another. Product health and safety standards for rich hand poor countries may differ significantly if there are significant costs differences between high and low standards. Even in instances where all countries agree on the particular international environmental value of a particular good (e.g., marine biodiversity, clean air), the costs and benefits of protecting it may not be congruent with national borders (Pearson, 1998:10-37).

National and Multilateral Trade Measures

The term "unilateral measure" is used in different ways. One use of the term 'unilateral trade measures' is when a state imposes, unilaterally or solely, a trade measure on another country in circumstances that are clearly provided for by multilateral trade or environment agreements.

A second use of the term 'unilateral trade measures', and perhaps the more common interpretation, refers to extra-judicial trade measures – trade measures that involve the application of domestic law in jurisdictions other than where there law was enacted (e.g., a state imposes a trade measure against another state or group of States based on a standard or norm that other States may not have accepted under multilateral co-operative agreements (such as MEAs)). Even where trade measures are used to defend an international agreement or norm, they could also be considered unilateral in the second sense: 1) if these norms are not clearly articulated in an multilateral environmental agreement (MEA); 2) if the international agreement in question contains no language regarding the use of trade measures (such as the UNEP General Assembly Resolution calling for a moratorium on the use of drift-nets longer than 2.5 kilometres on the high seas). Even if trade measures were authorised by a given MEA, they could be considered unilateral if they are not implemented according to an agreed upon procedure.

The use both sorts of unilateral trade measures can be contentious (See Box 16). Whether measures are taken to defend distinctly national standards or an internationally accepted environmental objective, they can raise questions of equity between trading partners, particularly when they are imposed by developed countries on developing countries, and if they compel others to engage in expensive environmental protection measures that go beyond their self-interest (CSE, 1996 & CSE, 1998; Pearson, 1998:10-37)[104]. Unilateral trade measures based on national standards, in particular, can provoke political backlash, retaliatory trade measures and resentment from foreign governments against what is considered "eco-imperialism"[105]. This, in turn, can generate tension that hinders co-operation on a range of other bilateral or international issues.

The international community is more supportive of trade measures provided for by multilateral co-operative agreements (such as MEAs) and which are implemented multilaterally. It is generally accepted that trade measures are more likely to have a positive environmental impact "when they are imposed multilaterally and in conjunction with effective fisheries management policies" (Sen, 1994:121). Moreover, multilateral measures are widely considered to be less susceptible to protectionist aims. They also tend to be accompanied by measures to establish channels for assisting developing nations to attain higher environmental standards (Sen, 1994).

Some countries remain cool to the idea that trade measures could be used even in association with the consensus-based multilateral environmental agreements (MEAs). However, to date, no trade dispute has challenged a measure directly authorised by an MEA. Moreover, the March 1999 WTO High Level Symposium on Trade and Environment signalled growing acceptance that in the instance of conflict between well-supported MEAs and trade provisions of MEAS, WTO rules should defer to MEAs.

Legal Concerns

The text of the GATT clearly states that some trade restrictions in the interest of conservation and animal and plant health are permissible, even though they violate the general principles of the GATT (See Chapter I). Article XX (b) of the GATT permits trade actions that are "necessary to protect human, animal or plant life or health". Article XX (g) provides for actions "relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption" (See Box 15 for more detail).

Well-crafted decisions or actions taken by regional fisheries management bodies would most likely fall within one or both of these exceptions. Recent moves in ICCAT and CCAMLR in support of trade restrictions are significant. Not only will they contribute to the enforcement of the management decisions of these organisations, they also open the door for other RFMOs to consider using similar methods to enforce their management decisions.

Still, it remains possible that non-members will challenge trade measures developed under MEAs and RFMOs in the WTO fora, particularly if a country is party to the WTO but not the MEA or RFMO under consideration (Brack, 1997; Stone, 1999). From the conservation perspective, there is a concern that "conservation policy-makers will feel a 'chilling' effect and may be reluctant to use trade measures unless there is clarification that trade rules permit such measures" (Downes, 1999:6).

Several potential remedies have been proposed (Cameron & Arden-Clarke, 1996; Sampson, 1999). First, WTO Members could amend certain WTO agreements (such as the exception provisions of GATT Article XX) or draft an "Understanding of Interpretation" that explicitly accommodates MEA measures that might otherwise contravene WTO rules and/or articulate the assumption that such trade measures are presumed to be compatible with GATT Article XX exceptions (Sampson, 1999:2; UNICE, 1999). There is also pressure for the WTO, in collaboration with the FAO and organisations with environmental expertise, to include in the understanding, the trade policy considerations that RFMO and MEA negotiators should take into account in order to minimise risks of conflict with trade rules (e.g., proof that the measure is necessary to achieve the agreement's environment objective, bearing in mind the precautionary Principle). Second, Members could be permitted to seek the approval of WTO Members for a waiver of a WTO obligation in order to meet an MEA obligation.

Compliance Issues

As noted above, a key rationale for the use of trade measures is their power as an enforcement mechanism. When RFMOS, such as ICCAT adopt decisions such as the ban of imports of bluefin tuna products, member countries are responsible for implementing appropriate measures at the national level.

However, trade measures can face problems with lack of compliance and lack of incentives for compliance. Potential difficulties associated with their use – including inadequate technical, financial and institutional capacity – can be anticipated or reduced. Still, their effectiveness can be limited by poor implementation and enforcement capacities, illegal trade, insufficient incentives for participation and failures in co-operation between countries (including financial transfers, sharing of management responsibilities). There can also be problems with over-reliance on one type of economic control, such as a trade ban, in cases where the underlying environmental and economic context is usually very complex and inadequately understood (OECD, 1999:39). Trade measures may not necessarily guarantee better management practices or environmental outcomes, or may not be the most effective or fairest policy tool available (Dean, 1991:4; Barbier & Schulz, 1997; Barbier, 1997; Schulz, 1998).

The political acceptability of the expanded use of trade measures by RFMOS and MEAs will depend on efforts to guard against the use of environment measures as disguised protectionism; increase market access for developing countries; and provide adequate financial and technical resources to developing countries in order to offset or compensate some of the costs they face to improve fisheries management and implementation of international agreements[106].

One solution for maximising the effectiveness of MEAs as well as reducing incidences of cheating and defections from co-operation "lies in a multilaterally negotiated and balanced combination of trade measures, whose effects will be coercive, with positive measures that will address specific structural problems and offer incentives for co-operation" (Osakwe, 1997:2). Whereas bans/prohibitions, quotas, taxes, and mandatory labelling schemes can be categorised as co-ercive trade measures, a series of co-operative trade measures and other 'positive measures' are proposed.

Co-operative trade measures could include import/export permits, prior informed consent procedures and waivers. They could also include, project financing, transfer of environment-friendly technologies, joint implementation of projects, "green loans", credit guarantees, elimination of environmentally harmful subsidies, "green non-actionable subsidies", grace periods for countries within which to satisfy MEA commitments, and

technical assistance for capacity-building (including seminars, workshops, training and advisory services) (Osakwe, 1997:4). Other ways to enhance gains for countries whose compliance is being sought is to provide debt relief, foreign aid, and most favoured nation reductions in tariffs on selected products (Blackhurst, 1995:335; Osakwe, 1997:4). The proposal is to establish both trade and positive measures as binding multilateral obligations within an MEA framework to ensure that the two types of measures are equally applicable to all countries.

Finally, it is noteworthy that there are other alternative fora to the WTO that are relevant to conservation of marine living resources and trade measures. UNCLOS, for example, includes provisions for dispute settlement procedures. It has been proposed that trade restrictions imposed for marine conservation purposes may, under certain circumstances, provide a targeted State party with the basis for a dispute settlement claim under UNCLOS (McLaughlin, 1997).[107]

4. Addressing the Fisheries Crisis on the Demand Side

If better management systems were in place, the capacity of the worlds marine fisheries and ecosystems to supply of fish and fish products could increase. Given the widespread absence of such regimes, many marine ecosystems can not withstand further demand pressures. As such, demand side policies such as eco-labelling or consumer boycotts (in cases of endangered species or overfished stocks) have been proposed as options to enhance incentives for better management of fisheries and marine ecosystems, raise public awareness, and increase pressure on governments to improve management regimes.

Box 16. The Tuna-Dolphin and Shrimp-Turtle Cases

To date, the use of trade-related environment measures based on national standards in the fisheries sector has resulted in several legal challenges and have culminated in the use of the GATT dispute settlement body[108].

First, the 1991 GATT tuna-dolphin decision found that a U.S. ban on imported tuna from Mexico caught using purse seine nets (alleged to result in unnecessary incidental kill of dolphins) violated GATT rules. The panel argued that:

- "Under GATT rules…the U.S. was obliged to provide Mexican tuna (as a product) with a treatment no less favourable to that accorded to U.S. tuna (also as a product, regardless of how the tuna was harvested" (WTO, 1998a:4).
- While the GATT's Contracting Parties could adopt GATT-inconsistent measures (falling under the 'General Exceptions' clause of GATT Article XX) for the protection of the environment or the conservation of exhaustible natural resource's, the intention of the clause was that it should only apply to activities within the jurisdiction of the importing country (WTO, 1998a:4).
- The U.S. measure was not "necessary" in that other measures such as negotiating an international agreement to limit dolphin kills may have been available; and that the particular scheme for calculating permissible dolphin kills put a special burden on trade and was not necessary[109].

Second, in April 1998, the WTO dispute panel ruled in favour of India, Malaysia, Pakistan and Thailand and against the United States' ban on importation of shrimp and shrimp products based on environmental considerations (enforcement of Turtle Excluding Devices on Shrimp Trawlers)[110]. The ruling was upheld on appeal in October. For some conservationists, the message is that the environment-related clauses within the charter of the WTO cannot be relied upon to defend environmental interests against trade prerogatives when unilateral trade measures have been used. For others the appellate report was a promising sign. It reversed the earlier rejection of U.S. claims that the shrimp ban was justified under Article XX of the GATT (thus providing the first case which legitimises trade restrictions on environmental grounds), despite the fact that the overall decision against the U.S. was upheld on grounds that the ban was applied in an arbitrary and discriminatory manner.

Sources: For information about the WTO Shrimp-Turtle Dispute see (WWF, 1997; Stillwell & Arden-Clarke, 1998; CSE, 1998 & 1996; WTO, 1998X, Shaffer, 1998). For information about the GATT Tuna-Dolphin Disputes see (Kingsbury, 1994; GATT, 1991 & 1994; Hernandez, 1993; Porter, 1992; Skilton, 1993).

Eco-labelling[111]

In recent years, there has been a proliferation of voluntary eco-labelling programmes for various products and sectors, many initiated by NGOs and private industry as well as governments. Current labelling initiatives in the fisheries sector include the following:

- **Marks of Origin:** In many instances, producers have sought to gain competitive advantage by drawing attention to the origin of fish through labels. Moreover, the labelling of fish by origin and species is promoted by governments in some instances as a way to enable more effective tracking and identification of fisheries products to aid fisheries management.
- **'Dolphin Safe' Labels:** A variety of producers in the United States have made self-declarations that their tuna is 'dolphin safe'. The Dolphin Protection Consumer Information Act (DPCIA) of 1991 established criteria for the manner in which tuna must be caught. (On a voluntary basis, companies can then label their tuna to be 'dolphin safe'.)
- **Organic Seafood Labels:** There are also efforts underway by fishing companies in some parts of the world to label fish as farmed or wild, and more recently to win marketing niche with so-called 'organic seafood'.
- **The Marine Stewardship Council (MSC):** The MSC is an independent, not for profit, international body headquartered in London, UK. It was initiated by the World Wide Fund for Nature (WWF) and Unilever, a large fish retailer, to promote sustainable and responsible fisheries and fishing practices worldwide. The MSC has, in collaboration with a selected group of parties interested in and experiences with fisheries issues, established a broad set of Principles and Criteria for Sustainable Fisheries[112]. Fisheries meeting these standards will be eligible for third party certification by independent certifying bodies accredited by the MSC. On a voluntary basis, fishing companies and organisations are expected to contact certifiers in order to have a certification procedure carried out[113]. Fish processing, wholesaling and retailing companies will be encouraged to make commitments to purchase fish from certified fisheries only. Unilever, for example, has pledged to buy only MSC certified fish by 2005. By opting to use the MSC logo, producers of fishery products are expected to give consumers the option to buy fishery products that have been derived from sustainable, well managed sources. Test cases for certification are presently being conducted[114].
- **The Marine Aquarium Council (MAC):** MAC, a non-profit international organisation based in Hawaii (U.S.A.), brings together representatives of the aquarium industry, hobbyists, conservation organisations, government agencies and public aquariums. MAC aims at conserving coral reefs by creating standards and educating and certifying those engaged in the collection and care of ornamental marine life from reef to aquarium. It is working to establish standards for 'best practices' in the supply of marine aquarium organisms; an independent system to certify compliance with these standards; and consumer demand and confidence for certified organisms, practices and industry participants[115].
- **The Responsible Fisheries Society of the United States (RFS) and the Global Aquaculture Alliance (GAA):** RFS and GAA, headquartered in the U.S.A., have announced a joint eco-labelling scheme to recognize industry commitment and participation in responsible fisheries and aquaculture. The merger brings over 200 companies and individuals from 19 countries together in an effort to promote sustainable seafood harvest and production worldwide[116]. The new eco-label will be offered to industry members who endorse the Principles for Responsible Fisheries of RFS or GAA's Principles for Responsible Aquaculture, and incorporate these Principles into their business. GAA will conduct evaluations of shrimp farms based on a system of self-assessment questionnaires. The RFS is considering developing a third-party certification system[117].
- **International Organization for Standardization (ISO):** General guidelines for environmental labels and declarations not addressed to any specific product category or sector are being developed by ISO, a non-governmental, worldwide network of national standards institutes[118]. For each country, the member body of ISO is the national private or government sector body "most representative of standardization in its country". ISO has a specific series on environmental management (ISO 14000) and is developing standards in the field of

environmental labels and declarations[119]. The objective of the ISO 14 020 series is to set standards for the design and implementation of different types of eco-labelling programmes but not to lay down specific certification standards[120]. The Marine Stewardship Council, an independent organisation for marine capture fisheries that was originally promoted by the World Wide Fund for Nature (WWF) and Unilever, a large fish retailer. (See Box 17)

While it would be wrong to see eco-labelling as an alternative to supporting efforts to implement sustainable fisheries management systems, the potential usefulness of eco-labelling schemes to create market-based incentives for environmentally friendly products and production processes is internationally recognised. At the Rio Earth Summit, governments agreed to "encourage expansion of environmental labelling and other environmentally related product information programmes designed to assist consumers to make informed choices."[121] Another basis for international eco-labelling efforts is provided by the FAO Code of Conduct for Responsible Fisheries and other international and national instruments that emphasise the importance of achieving sustainability objectives through market-based measures and improving the identification of the origin of fish and fishery products traded. Moreover, consumer organisations in many countries, and some international consumer unions, argue that consumers have a right to get information about products offered on the market that is relevant to their values and preferences, especially information pertaining to product safety or impacts on health or the environment.

In the fisheries sector, there are hopes that eco-labelling schemes will:

- Provide information about the environmental impact of products and enable more informed purchasing behaviour by consumers and intermediaries;
- Provide consumers with the opportunity to express their environmental/ecological concerns through their purchasing behaviour and the market mechanism (e.g., dedicating their buying power to 'green catches');[122]
- Encourage retailers and consumers to buy only fishery products that come from sustainably managed resources;
- Raise environmental standards in the production of the commodity;
- Generate price differentials between eco-labelled products and those that either do not qualify for eco-labelling, or those whose producers do not seek to obtain such labelling;[123]
- Enhance incentives for producers to supply products that meet the eco-labelling criteria in order to receive greater returns (a 'green premium') or gain market share for their products;
- Provide competitive advantages, market access or greater market share for fisheries products derived from sustainably managed fisheries; and
- Generate greater support by industry and other interested parties for improved fisheries management.

Eco-labelling schemes are often focused on domestic producers for the domestic market. Eco-labelling can also have the effect of enabling consumers to influence producers in other countries. A sizeable share – 40 percent in 1996 – of overall global fisheries production enters international trade (FAO, 1999a). This implies that eco-labelling has the potential to harness consumer preferences to create market-based incentives for sustainable fisheries management and improved production processes in other countries (such as harvesting methods that reduce by-catch, or fish caught in compliance with sustainable management regimes). Given that most trade in these products is destined for industrial country markets, eco-labelling schemes that focus on consumers in industrial country markets have the potential to encourage more sustainable international trade flows.

Industry interest in eco-labelling stems in part from economic interests. Some companies fear that growing public concerns about over-exploitation of marine fish stocks, environmental problems associated with fish products and shrimp culture, as well as animal rights health considerations (such as contamination) may spur a decline in demand for fish and fish products. The adoption of eco-labelling schemes for fish and fishery products may be seen to some extent as an effort by industry associations and large-scale fish wholesalers and retailers to retain market share and sustain demand for fish products in countries where consumers are highly responsive to environmental issues (e.g., U.S., Germany, U.K., and Scandinavian countries).

At present, it is completely voluntary for most seafood producers to seek certification or not. However, it is worth noting that voluntary eco-labelling schemes have become a fact for a wide range of products in other sectors. The degree to which labels have captured market share varies depending on the product in question, and data concerning the market and environmental impact of eco-labelled products is very difficult to obtain[124].

In some markets (e.g., household cleaning products) eco-labels have established a track record of promoting the spread of more environment-friendly production processes and product characteristics as well as raising consumer awareness about environmental issues[125]. So far, the results are more limited for natural resource based products such as organic and forestry products because eco-labelling schemes apply to only a very small share of production. Moreover, most schemes are too young to provide clear data. One exception is the single issue "dolphin safe" label attached to a large proportion of tuna products in the U.S. market. However, the label is ancillary to regulatory requirements, so labelling alone can not be identified as the primary cause of the high market share.

Eco-labelling schemes, and in particular those that extend eco-labelling principles from household cleaning goods to agricultural and natural resource based products have provoked considerable concerns among some countries, particularly developing countries. To date, there is no conclusive evidence that eco-labelling schemes for other natural resources, such as forestry products, have, on average, proven detrimental to developing country interests. In terms of the fisheries sector, developing countries, however, already have concerns about the impact on their competitiveness of rules related to fish additives and food safety, fish health and technical standards[126]. Their concern is that eco-labelling schemes in importing countries could simply add to the lair of constraints and competitive challenges they face. Four areas of concerns and several opportunities can be articulated[127].

Opportunities

Many industry groups, civil society organisations and governments acknowledge the economic and ecological opportunities that eco-labelling could offer.

Environmental Opportunities

Many governments and industry groups recognise that eco-labelling could provide needed economic incentives for better long term stewardship and availability of natural resources important for national economic welfare. Eco-labelling schemes can provide countries one tool to help them fulfill commitments made under international agreements on important environmental imperatives such as responsible fisheries and the conservation and sustainable use of biological diversity. The fundamental rationale for eco-labelling is, after all to generate political support for improved environmental management and to raise environmental standards through consumer choice.

Economic Opportunities

Labelling provides one of the least-coercive market-based mechanisms to improve conservation outcomes. Private sector interest in eco-labelling for fisheries products in both developed and developing countries is growing, especially given the business and export opportunities eco-labelling has generated in some other sectors. Moreover, as already noted, it is the potential for growth in the market share of eco-labelled products that makes eco-labelling a compelling business choice. If fisheries management improves in response to efforts to comply with certification criteria, the potential benefits to fisheries in both industrial and developing countries could go far beyond higher revenues which eco-labelled products may generate. In fisheries, there are clear win-win options, even if the task of fisheries management is daunting in many places.

Eco-labelling is seen by some as an important element for gaining access to new premium green markets (e.g., market access). For those producers willing and currently or potentially able to meet the sustainability requirements, eco-labelling presents an opportunity to add value to existing products, expand reach in existing markets, or maintain market share in a competitive environment[128]. Product differentiation could be a way for some exporters to enhance their export earnings and eco-labels could be one source of such product differentiation.

There are also hopes that eco-labelling could provide new opportunities for attracting capital investment and joint ventures in developing countries. For example, some developing countries hope to enhance their chances at

meeting criteria for the certification of their fisheries through cooperation among several countries in their region or through joint ventures with fishing enterprises from industrial countries. Eco-labelling may also provide an opportunity for innovative producers to benefit from the use of more socially- and culturally-friendly production methods (Downes & Van Dyke, 1998:33).

There are hopes that developing countries may be able to mobilise additional financial and technical resources through their participation in eco-labelling schemes. Conceivably, eco-labelling schemes could comprise specific support programmes to facilitate compliance by the private sector with the labelling criteria, especially in developing countries, as well as temporary measures to compensate individuals and households who may be negatively affected. Finally, some entrepreneurs in developing countries hope to carve out a distinct market niche based on the promotion of the sustainable nature of some artisanal modes of fish harvesting to both socially and environmentally conscious Northern consumers (Chaytor, 1999).

In the future, consumer consciousness of environmental concerns is likely to grow in both North and South. This point is clearly recognised by many producers in both developed and developing countries. In both developed and developing countries, producers are working to comply with broad trends in environmental standards, such as ISO 14 000, in order to become more competitive in international markets.

In both North and South, one can argue that labelling that responds to consumer interest is likely to grow. Thus, at the global level, it makes sense for producers to get on board, one way or another, with environmental considerations in order to maximise their long term competitiveness. Moreover, it is notable that there are several producer organizations and NGOs in developing countries that recognise the opportunities that eco-labelling can present and that have had significant and productive involvement in the discussion of and development of eco-labelling schemes.

Concerns

Despite these opportunities, some governments, producers and civil society groups have expressed various concerns about eco-labelling.

First, an overriding complaint is of lack of transparency and opportunities for participation in the development of product standards such as those that might play a role in assessments of sustainability. This is of particular concern in the fisheries sector where governments have primary management responsibility for fisheries within national exclusive economic zones and, moreover, are obliged under international law to cooperate with governments of other countries in the management of shared fish stocks and of fish stocks on the high seas. Effective participation of governments in the product standard setting process may therefore contribute to strong implementation of eco-labelling programmes.

Second, there are concerns among some governments and industry groups, particularly those from countries with strong fish export interests, that eco-labelling schemes could a) disguise underlying intentions to protect domestic industries, b) restrict market access; and c) erode national competitiveness for those less able to meet or afford foreign labelling and certification standards (Downes & Van Dyke, 1998:145).

Possible discriminatory effects of national and regional eco-labelling schemes can be attributed to a number of factors, including: 1) eco-labelling tends to be based on domestic environmental priorities and technologies in the importing country and may overlook acceptable products and manufacturing processes in the country of production; 2) the definition of product categories, and the determination of criteria and limit values may favour domestic over foreign producers; 3) eco-labelling may require foreign producers to meet criteria which are not relevant in the country of production (Vossenaar, 1997); 4) environmental infrastructures may differ widely across countries; and 5) certain parameters used for calculating the environmental effects of products throughout their life-cycle may be based on information collected in the importing country or countries with comparable conditions, and may overestimate the environmental impacts in the actual country of production. Furthermore, given the influence of the voluntary purchasing decisions of large wholesale, retail and restaurant chains that control large market shares in large fish consuming and importing regions, particularly in Europe and North America, these schemes could effectively lead to reductions in the capacity of non-eco-

labelled products to be exported to or simply sold within those markets.

Third, there are fears that the costs of bringing fisheries management practices into compliance with the criteria and principles of transnational or foreign eco-labelling schemes, going through the certification process, and maintaining certifiable status could be prohibitive[129]. One challenge is that the quantity and quality of fisheries data is often low in developing countries and this factor may be a constraint to certification[130]. Also, the burden of complying with foreign product standards may fall disproportionately on small suppliers to the market for whom the cost of acquiring information about, and achieving, certifiable status and standards is relatively higher[131]. There have also been complaints that the lack of auditing/certification/eco-labelling infrastructure in developing countries will leave them dependent on expensive foreign consultants. As a result, developing countries have emphasised their need for greater financial and technical assistance for the improvement of fisheries management systems. The challenge of attaining sustainability is not unique to developing countries alone. Many fisheries in developed countries are depleted and unlikely to achieve certification in the near future. In developing countries, there are many fisheries that are less developed/depleted and for which certification might be more easily achieved. Therefore, in terms of the state of a fish stock, some certification programmes may in fact favour fisheries in developing countries over those in some developed countries.

Fourth, the voluntary nature of certification can raise challenges. While voluntary schemes need not result in explicit restrictions as some mandatory schemes might, they may indirectly affect trade due to institutional factors in producing countries. Institutional factors could include difficulties faced by producers in some countries in obtaining adequate supplies of materials, environmentally-friendly technologies and other materials which are acceptable for use in, or necessary to comply with standards for, eco-labelled products. Other institutional constraints could be inadequate and unequal financial and technical capacity within domestic regulatory agencies to facilitate sustainable fisheries management. Without the support of governments, many private industries can not reasonably be expected to become sufficiently organised to independently institute effective management schemes and achieve certifiable status. In cases where governments either fail to act (or act inappropriately) to manage fisheries, the fishing industry may be penalised due to lower sales prices in the absence of certification[132].

Fifth, it can be argued that even if participation in eco-labelling schemes is voluntary, the definition of criteria for certification could clearly influence the impact of the schemes on countries with varied environmental and socio-economic conditions and interests. In the absence of some common international understanding, governments could be required to try to monitor, intervene or improve each individual scheme that arises to ensure the interests of their countries are not compromised. International guidelines on eco-labelling could reduce this potential burden of monitoring. Otherwise, there is the possibility that promoters of voluntary competing eco-labelling schemes, for example at the national level, are likely to seek to discredit the schemes of competitors.

Finally, many developing countries are concerned that eco-labelling schemes could operate to foreclose market access for those producers less able to meet labelling and certification standards (Downes, 1999). Developing countries can be put at a cost disadvantage in certification/eco-labelling schemes because 1) the auditing/certification/eco-labelling infrastructure does not exist in the country, and, as a result, many developing countries depend on expensive foreign consultants; 2) the lack of transparency and expertise in eco-labelling programmes in developing countries has led to doubts about the credibility of claims made by, and certified by, developing country accredited bodies; 3) the cost of bringing fisheries management practices into compliance with the criteria and principles of an eco-labelling schemes. In particular, there are fears that many export-oriented fisheries, particularly small-scale activities, of developing countries may be unable to achieve certifiable status in the short term[133].

It is evident that the above concerns need to be addressed in one way or the other to make eco-labelling a widely acceptable, applicable and effective tool for attaining sustainable fisheries. The likelihood of reaching a broad consensus on eco-labelling in the future will largely depend on efforts to establish an internationally accepted framework for such schemes (CTE, 1997; OECD,

Box 17. The Relationship Between Trade Rules and Eco-labelling

There is ongoing debate about how the TBT Agreement's different but related obligations on technical regulations and standards apply to eco-labelling initiatives. The WTO Secretariat suggests that the TBT agreement exerts "stronger control" over mandatory labels (those required by governments) than on voluntary or private eco-labelling schemes. However, the extent of control on each type of scheme is unclear (WTO, 1998a:12).

Eco-labelling schemes that are mandated by governments come clearly within the TBT's rules on technical regulations and other relevant WTO rules[134]. Voluntary, government and non-governmental labelling schemes also appear to be indirect targets of certain trade disciplines (Downes & Van Dyke, 1998). Members are required to take 'reasonable' measures to ensure that voluntary standardizing initiatives (which could include both government or non-governmental voluntary eco-labelling schemes) within its territory comply with the Code of Good Practice. (Analogous language found in the GATT requiring countries to take such 'reasonable' measures as are available to them has, in the past, been interpreted by dispute panels to require governments to take all constitutionally-available measures[135].

Voluntary eco-labelling schemes for fisheries products do not appear, in principle, to contravene existing multilateral trade rules. The 1991 Tuna Dolphin decision of the GATT Arbitration Panel is instructive in this regard. While the panel found U.S. import restrictions adopted by the United States on tuna caught in association with dolphin to be GATT-illegal, it accepted the U.S. voluntary 'dolphin safe' tuna labelling scheme (GATT, 1991). The panel noted that the voluntary label did not illegally restrict the sale of tuna since tuna products could be freely sold both with or without the 'dolphin safe' label, and because any competitive advantage conferred by the label depended on the free choice of consumers to give preference to tuna carrying the "Dolphin Safe" label (GATT, 1991). While one could assume that a similar logic would apply to voluntary transnational eco-labelling schemes, to date, there is no similar precedent regarding the application of WTO rules to them.

The TBT Agreement and PPMs

Another unresolved issue is how the TBT Agreement applies to regulations or standards that invite consumers to discriminate not only on the basis of product characteristics, but according to PPMs.

Two kinds of PPMs with significant environmental impacts can be distinguished. First, a process or production method can affect the characteristics of a product so that the product itself may pollute or degrade the environment when it is consumed or used (product-related PPMs). Alternatively, a process or method itself can have negative impact on the environment through, for example, the manner in which natural resources are harvested or extracted in the production phase (non-product-related PPMs) (WTO, 1998a). These production externalities do not affect the product characteristics.

Under WTO rules, the sovereign power of countries to restrict imports if they fail to meet domestic product regulations and standards relating to the physical characteristics of a product is left undisturbed. However, the power to make distinctions based on standards and regulations pertaining to PPMs which do not show up in the physical characteristics of the product is contested[136]. Likewise, the applicability of the provisions of the TBT Agreement to either mandatory or voluntary eco-labelling schemes that are based on non-product-related PPMs is also unclear, at best ambiguous and continues to be hotly debated[137]. Indeed, this has been an issue of much discussion in the WTO's Committee on Trade and Environment and Committee on Technical Barriers to Trade. One issue on which there is broad agreement is that transparency plays a pivotal role in avoiding potential trade difficulties and increasing the legitimacy of such programmes and participation in them by parties interested in their development.

The interpretation of WTO rules on these issues is important because for eco-labelling, the most relevant regulations or standards are those relating to PPMs and their environmental impacts. Criteria for eco-labels for fisheries products are likely to be based on life-cycle analysis, whereby assessments of sustainability consider all phases of a product – production, processing, use and disposal. That is, eco-labels in the fisheries sector are likely to be predominantly awarded based on non-product-related criteria, particularly those related to harvesting methods (including type of gear used, level of by-catch, impacts on the marine habitats, compliance with management system and health of the stock of origin) (Downes & Van Dyke, 1998:1).

Opposition to distinctions between products based on PPMs is often a strategy to guard against disguised protectionism. Within the CTE, there is recognition that standards related to non-product related PPMs will differ between countries due to a variety of factors. However, there are concerns that distinctions between products based on PPMs could be based on: a) arbitrary rationales that could undercut the principle of comparative advantage (for instance, regulations prohibiting products produced by

(continued)

Box 17. The Relationship Between Trade Rules and Eco-labelling *(continued)*

workers earning less than a certain minimum wage); and b) well-intended but parochial understandings of what is environmentally sound that are derived from domestic ecological conditions which may not apply to conditions in distant countries. The prospect of distinctions based on PPMs also raises fears that some countries will be able to impose unfair economic pressure on other countries (frequently less developed than the importer) to match domestic environmental standards in their own jurisdiction or lose market access (Downes, 1999). Developing countries, in particular, are often concerned that by broadening the scope of the GATT to permit distinctions based on environmental PPMs, they could be venturing toward a slippery slope whereby pressures for discrimination between products based on social PPM considerations (such as labour standards and human rights) might also intensify with even more significant potential trade ramifications.

Another argument presented against PPMs is that whereas conformity with product characteristic based standards can be assessed in either the producing country or the importing country, PPM-based requirements could be evaluated only on the site of production which could make this kind of assessment more expensive. Finally, there are concerns that PPM-based regulations might compel producers to use less efficient or costly technologies/methodologies, and/or restrict foreign suppliers' choice of technology[138].

From a conservation perspective, the reluctance to permit PPM-based measures is problematic due to the increasing importance of PPM-based standards and regulations for effective environmental management. Domestic PPM-related measures are aimed at preventing environmental degradation caused by production processes, and as noted in a 1997 OECD Report, domestic PPM-related requirements are important policy tools for promoting sustainable development. Indeed, the conservation and sustainable use of fisheries depends on regulatory and management methods in the production phase (e.g., harvesting) as this is when considerable environmental impact occurs (OECD, 1997b:7). PPM-related regulations and measures can be essential for controlling the environmental impact of consumption decisions. They also respond to the right of consumers to be informed about products they buy (OECD, 1997b:3). Finally, they offer the chance for greater efficiency because producers can compete to comply with standards in the most efficient way.

While many nations are opposed to environment-related PPM-based trade restrictions imposed by one country against others, there is growing acceptance of PPM-based measures that are based on multilateral agreements (or agreements between the two States in question). The idea is that multilateral negotiations regarding PPMs for particular products are more likely to reflect legitimate difference in the environmental capacity of a country or region to absorb pollutants, in the available environment resources and their rate of depletion or in the acceptable level of risk.

There are clearly a number of trade issues for eco-labelling that deserve further consideration and debate by both developed and developing countries. These include:

- The Applicability of the TBT Agreement: In order to reduce uncertainty, the international community could consider developing a specific 'interpretation' of the TBT's applicability to both voluntary and mandatory eco-labelling schemes.
- PPMS: As noted above the most-relevant category of PPMs for the fisheries sector is non-product-related PPMs. Further discussion is needed on how the use in eco-labelling programmes of criteria based on non-product-related process and production methods should be treated under the rules of the WTO Agreement on Technical Barriers to Trade[139]. Several options for addressing non-product-related PPMs are conceivable (these need not be considered mutually exclusive).

First, future eco-labelling schemes could, in principle, ensure that their product-related or non-product related PPM-based standards are based on those already reflected in international agreements. The logic is that if non-product-related regulations or standards (such as eco-labels) can be shown to be consistent with standards included in an international agreement, they can be presumed not to create an illegal obstacle to trade. However, in practice, there are few international agreements that contain specific non-product-related PPM standards. A second approach thus would lie in consolidating support for the development of both product-related and non-product related PPM-based standards (or regulations) in international agreements. Moreover, international standards regarding PPMs are more likely to reflect legitimate differences in the available environment resources and their rate of depletion or in the acceptable " level of risk. Third, there could be more formal efforts to develop a process for formulating criteria for acceptable PPM-based measures, and in particular, eco-labelling schemes. One international dialogue already underway to discuss and clarify some of these issues is a consultative process regarding the practicability and feasibility of developing global non-discriminatory technical guidelines for eco-labelling of products from marine capture fisheries hosted by the FAO.

1997; Arden-Clarke, 1997; UNCTAD, 1994; Zarilli et al, 1997). The FAO Fisheries Department is, for example, continuing a consultative process regarding the practicability and feasibility of developing global Non-Discriminatory Technical Guidelines for Eco-labelling of Products From Marine Capture Fisheries (FAO, 1998e)[140].

In developing eco-labelling guidelines, challenges for action by policymakers and industry include:

- Strengthening international co-operation and greater compatibility between the environmental objectives of eco-labelling and the trade (e.g., market access) and sustainable development interests of developing countries. Possibilities for reducing negative trade effects could include the provision of technical and financial support to institute effective fisheries and aquaculture management schemes and meet the costs of certification procedures; and the development of multilaterally agreed guidelines for eco-labelling and mutual recognition of eco-labelling schemes, transparency principles and wide information dissemination (OECD, 1997; Zarilli & Vossenaar, 1997;UNCTAD, 1997).
- Agreeing on an operational standard of sustainability necessary for certification[141]. A related challenge will be allowing for multi-stakeholder participation in the process of formulating sustainability criteria and certification processes. Fishworkers organisations in developing countries have been particularly interested in being consulted and ensuing that the diversity of fisheries and interests in developing countries are considered (Matthews, 1998a:1; ICSF, 1998c);
- Achieving a balance between applying standards in as uniform manner as possible while taking into account differences in the fisheries themselves and in their management in different countries (e.g., artisanal fisheries on inshore resources, fisheries on straddling stocks, etc);
- Exploring ways to ensure that a proliferation of labelling schemes does not lead to credibility problems and confusion among consumers (Tickell, 1999; Mattoo & Singh, 1994)[142]. Learning from relevant experiences from eco-labelling schemes applied to other products such as forest products is one possibility.
- Averting the development of a bifurcated international market for fisheries products: one in the North for sustainability produced products, and another in the South where sustainability concerns are overlooked (FAO, 1998c; Mattoo & Singh, 1994)[143].
- Clarifying the relationship between trade rules, PPMS and eco-labelling schemes (both voluntary and mandatory) (See Box 17).

Consumer Boycotts

Reduced consumption of unsustainably produced fisheries products and overfished species is consistent with the Rio Declaration's call to reduce and eliminate 'unsustainable patterns of production and consumption' (Principle 8). Some citizens' campaigns and consumer boycotts target: a) particular overfished stocks or endangered species where there is a view that there should be reduced or no consumption; or b) fish products that are harvested in ways that have readily identifiable environmental effects (e.g., fish and fish products harvested from coral reefs using dynamite or cyanide) (Novaczek, 1998:9). The recent swordfish boycott by restaurants on the East Coast of the US is one example[144].

While consumer's participation in boycotts reflects a worthy desire to manage their consumption and imports, it is important to be aware that large consumer retreats from particular fish products can adversely affect the livelihoods and employment of fishworkers in fishing-dependent communities around the world. Both consumer boycotts and import bans can affect those who do produce sustainably along with those who do not. The challenge for those who initiate consumer campaigns targeted at a particular industry or community is to consider measures that can encourage better management strategies, or offer political or financial support for programmes that assist affected communities transition away from offending practices or into other employment.

Likewise, it is important to note that campaigns in developed countries aimed at reducing overall fish consumption may not make significant dents in fisheries demand. Products that are rejected by consumers in developed countries may simply be consumed by expanding markets in developing countries. Also, a focus on reducing direct human consumption of fisheries products may leave other important sources of demand for fisheries products undisturbed, such as the demand for fish products for fishmeal to use as livestock and aquaculture feed.

Chapter V Highlights

This chapter has considered the role different trade policies and measures may play in promoting environmentally sound fisheries management and sustainable development. The chapter has discussed possible effects on the fisheries sector and on development of tariff liberalisation and subsidies reductions, consumer boycotts, and eco-labelling. It considers the desirability of pursuing trade measures provided for by multilateral environmental agreements such as the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora.

The following key observations were made:

- as there is inadequate consideration of the sustainability impacts of trade flows and trade liberalisation efforts, there is a clear case for more thorough assessment of the environmental and social costs and benefits of existing and future trade liberalisation efforts in both multilateral and regional fora;

- there are several points on which the ability for the international community to move forward with meaningful discussions on fisheries will depend on striking an appropriate balance between international trade agreements, international legal provisions in favour of developing countries, and multilateral environmental agreements. It may also be necessary in this context to clarify the appropriate interpretation of WTO rules as regards processes or production methods, multilateral environmental agreements, regional fisheries management organisations, and eco-labelling schemes;
- in order to expedite implementation of sustainable fisheries worldwide, there is a need to ensure that industrialised countries fulfil their obligations vis-à-vis developing countries, both in terms of applying the Special and Differential Treatment provisions agreed to in the context of the World Trade Organisation, and in terms of facilitating developing country access to the financial and technical resources agreed to under international agreements;

- efforts to promote improved fisheries management, whether through the reduction of subsidies, eco-labelling schemes, or other trade measures will depend on co-operative international efforts to develop mutually satisfactory standards against which to judge the sustainability of fisheries activities. These efforts will likely need to consider new measures that can be taken to facilitate the capacity for developing countries to participate in legitimate environmental protection measures without compromising national sustainable development goals.

In conclusion, it is important to note that no trade policies will replace the primary need for better fisheries and marine ecosystem management policies in both developed and developing countries, and on the high seas.

Conclusion

The starting point of this paper was the fact that at both the national and international levels, the conservation of marine ecosystems and sustainable fisheries are impeded by open access, inadequate management measures and limited enforcement procedures. The paper noted the imperative of expediting efforts to improve management. It also highlighted that the political momentum for the expansion and liberalisation of international trade in fish and fishery products is stronger than it is for improved fisheries management. Likewise, the enforcement capacity of the international trade regime is at present stronger than regimes promoting international environment and sustainable development objectives.

The paper has emphasised that sustainable development is the overriding strategic issue and challenge to all economic issues. It recognised the need to find an appropriate balance between trade, economic, social, conservation objectives, and sought to place the need to promote sustainable fisheries and marine conservation within the broader context of sustainable development.

Key Findings

- There is a trade-sustainable fisheries nexus that is worthy of further exploration.
- International trade can have negative environmental impacts if it increases demand for and harvesting of fishery resources that are not effectively managed or regulated. Where environmental controls are inadequate, trade liberalisation can encourage more use of practices which are ecologically detrimental and exacerbate overexploitation of fish stocks.
- There are significant possibilities for positive synergy between trade and trade policies, and sustainable fisheries and broader sustainable development objectives. Increasing trade opportunities may, for example, focus the minds of some countries on the need to conserve a major source of foreign earnings and thus contribute to sustainable fisheries and conservation objectives. Trade liberalisation in the form of subsidies reduction and reduced tariff escalation can promote more efficient use of fisheries resources, reduce trade distortions, enhance market access for developing countries (particularly for processed fishery products) and thus increase incomes and employment opportunities.
- Many industrial and artisanal fishing communities fear the impacts of conservation efforts on their livelihoods and competitiveness. Governments also have reservations about how conservation efforts may affect their access to markets and domestic fishing communities.
- International fisheries trade can play an important role in the development strategies of many developing countries, and it is the cornerstone of many fishing communities throughout the world. It is possible, however, that while some countries may gain, in aggregate, from the exploitation of fisheries resources for export, some portion of its population, or other countries, may not reap any benefits, or indeed, may be made worse off. There are fishing communities that fear the impact of expanded trade on their livelihoods, culture, local development, and food security.
- The global market does not currently contain within it sufficient feedback loops to ensure that environmental costs and sustainability concerns are internalised, or indeed even recognised. Moreover, there is no automatic mechanism within the trade system for constraining trade at points where it is clear that the scale of trade and production are out of proportion to the availability of the fisheries resources.
- There is insufficient empirical analysis of the sustainability effects of previous and proposed negotiations for liberalisation of trade in fish and fish products, and the Precautionary Principle requires us, in situations where clear evidence is lacking, to err on the side of caution.
- Trade law and policies may impede efforts to reduce pressures that drive overfishing, while at the same time offering opportunities for reforms in the fisheries sector that could promote conservation.

Issues for Further Research

Areas for future research include:

Market structure of fisheries:

- the structure of fisheries markets, such as the level of competition or concentration among buyers and sellers, trends in income earned by different actors within the sector (e.g., harvesters, processors, traders, wholesalers & retailers) and the way in which prices for fishery products are determined;
- the links between market structures, prices, trade liberalisation and sustainability issues, for instance through analysis of trade flows by country and fish stock, the relationship of these flows to the evolution of prices for different products, or the impact of different tariff rates or other trade-related measures on the price of fish and as well as supply and demand for fish and fish products;
- the impact of private and public debt and debt servicing obligations on overfishing and on efforts to reduce fishing capacity[145].

Environmental, economic and social impacts of trade

- Environmental, economic and social impact assessments of the benefits and costs of trade in fish and fish products[146];
- assessment of the environmental and social impacts on the fisheries sector of existing and future trade liberalisation efforts. In addition, the impact of trade on marine biodiversity, coastal community development, food security and the promotion of sustainable livelihoods warrants extensive consideration.;
- the international trade agreements' special and differential treatment provisions for developing countries, and how improved application of these might help or hinder efforts to reduce overexploitation of fish stocks;
- analysis of whether growth in foreign direct investment in the fisheries sector will benefit developing countries and small-scale fishing communities, and of whether multilateral negotiations on investment might help or hinder improved fisheries management;
- Case studies that closely examine the environmental, economic and social benefits and costs of trade in fish and fish products that are not well managed. The studies could approach this task by looking at particular fish stocks, e.g. wild shrimp stocks, salmon (farmed and wild), live reef fish, sharks and tuna.

International trade and fisheries management options

- Possible legislative frameworks which improve compliance with international fishing agreements and conservation measures without interfering with trade, and design and implementation of mechanisms that can protect an open trade system from distortions while simultaneously contributing to better management of fish stocks, and overall food security;
- Clarification of the appropriate interpretation of WTO rules as regards processes or production methods, multilateral environmental agreements, regional fisheries management organisations, and eco-labelling schemes;
- policy options for resolving social and environmental tensions surround fishing access agreements
- exploration of the potential role for, and impacts of, regional trade agreements in the fisheries sector (e.g. North American Free Trade Agreement (NAFTA), Southern Cone Common Market (Mercosur), Asia-Pacific Economic Co-operation Forum);
- exploring possibilities for trade-related policies that would encourage the gradual shift of a heavily geographically concentrated and over-capitalised industry to more environmentally-friendly methods of production, processing and commercialisation as well as trade in higher value-added fisheries products;
- seeking to define international participatory institutional mechanisms that would promote free and adequate information flows among concerned communities, as well as balanced and multi-disciplinary approaches to trade, multilateral environmental agreements and sustainable fisheries management issues and agreements.
- methods for increasing technical and financial assistance to assist developing countries develop and enforce effective fisheries and ecosystem management regimes.

Fora for Discussion of Trade/Fisheries/ Sustainability Issues

The key fora for discussions of the trade-fisheries-sustainability nexus are the FAO Committee on Fish Trade, the WTO Committee on Trade and Environment Discussions and the Commission on Sustainable Development (CSD). Further options for consideration include:

- Reducing the balkanisation of current trade/ fisheries/sustainability discussions by organising joint meetings of the relevant committees and staff of the FAO, WTO, CSD, and other such as OECD, UNCTAD, UNEP and non-governmental environmental and development organisations from both North and South.
- Multi-stakeholder dialogues that discuss linkages between trade, conservation, sustainable development and fisheries. These dialogues could bring together government, industry players and NGOs from the conservation, fisheries and sustainable development communities. The focus should be on building a new international agenda on trade and fisheries that considers:

  – **Trade and sustainable fisheries management** – Designing and implementing policy mechanisms that could protect an open trade system from trade restrictions and distortions while simultaneously contributing to better management of fish stocks, marine conservation and overall food security.

  – **Trade and economic development** – Defining policies and programmes that would recognise the importance of the fisheries sector to developing countries for balance of payments and foreign exchange needs; food security; and their right to development through fair market access rules. Policies should simultaneously promote sounder management methods by transferring technical and financial resources and co-operation.

  – **Trade and industry adjustment** – Outlining trade-related policies that would encourage gradual adjustment of a heavily geographically concentrated and over-capitalised industry to shift to more environmentally-friendly methods of production, processing and commercialisation as well as trade in higher value-added fisheries products.

  – **International governance on trade and sustainability issues** – Exploring participatory institutional mechanisms that would promote free and adequate information flows among concerned communities, as well as balanced and multi-disciplinary approaches to trade, multilateral environmental agreements and sustainable fisheries management issues and agreements.

Appendices

Appendix I

Examples of Regional Trade Arrangements

The Andean Community, originally the Andean Pact, is a regional free trade agreement created in 1969, the members of which are Bolivia, Columbia, Ecuador, Venezuela and Peru.

The Asia-Pacific Economic Co-operation forum (APEC), founded in 1989, includes 18 countries situated around the Pacific Rim. APEC economies dominate world production and trade in fishery and aquaculture products; together they account (in volume terms) for: 68% of global fish production (capture and farmed); 78% of world aquaculture production; 55% of global fish exports; and 58% of global fish imports. Over 85% of APEC fish and fish product exports are to other APEC economies, and 65% of imports come from other APEC members. APEC has held a ministerial meeting on environment, and has working groups on relevant issues such as liberalisation of trade in timber, liberalisation of trade in fisheries products, and marine conservation.

The European Union began as an economic union but has moved over time towards harmonisation of standards and policies in many fields. The European Union currently has 15 members and is considering applications from additional states in Eastern Europe. The Union now has regional policies on agriculture, fisheries and the environment, including aspects of wildlife and habitat conservation. The institutions of the European Union express and maintain an ever closer union of European nations and have become more numerous as the Union's responsibilities have broadened. They include the European Parliament, the Council of the European Union, the European Commission, the European Court of Justice, the European Investment Bank, the Committee of the Regions European Ombudsman, and the European Monetary Institute.

The Free Trade Area of the Americas (FTAA). At the 1994 Summit of the Americas in Miami, Brazil, Canada, the United States and 32 other countries committed to negotiate a free trade agreement among the countries of the Western Hemisphere by 2005. Environmental issues are also being discussed, but are currently de-linked from trade discussions.

Mercosur (Mercado Común del Sur, Southern Common Market), is a regional trade agreement between Argentina, Brazil, Paraguay and Uruguay. The Mercosur countries have declared the goal of becoming a customs union with tariff-free internal trade and a common external tariff for all of South America by 2006. In preparation for this, Mercosur has signed trade agreements with both Chile and Bolivia; is considering Venezuela, Columbia and Peru for membership; and is involved also in negotiations with the Andean Community.

The North American Free Trade Agreement (NAFTA) is a regional trade agreement to which Canada, Mexico and the United States are parties. The NAFTA was accompanied by an environmental "side agreement", which establishes a tripartite Commission on the Environment (CEC). Citizens may file complaints with the CEC against governments for failure to enforce environmental laws, and the CEC Secretariat can conduct an investigation in appropriate cases. The CEC has also conducted studies an ecological and economic relationships among the NAFTA partners, as well as some work on assessing environmental impacts of NAFTA. The NAFTA provides that countries "should not" relax environmental measures to encourage investment in its territory.

The South African Development Community (SADC) includes Zimbabwe, Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, Swaziland, United Republic of Tanzania, Zambia, and is chaired by South Africa. SADC is considering urther economic integration and initiatives to improve the regional climate for investment.

The South Asian Association for Regional Co-operation (SAARC) was formed in 1985. Its membership includes India, Bangladesh, Pakistan, Nepal, Sri Lanka, the Maldives and Bhutan. Its members gather regularly to discuss a wide range of political, economic and social issues.

Appendix II

Key Principles, Rules, Forums of the GATT/WTO Regime

The Uruguay Round agreements were negotiated in the Uruguay Round of multilateral trade negotiations and were signed in Marrakech in 1994. These agreements are binding upon all 134 WTO Members and in total are referred to here as the "WTO rules." Most relevant for this discussion are:

- the General Agreement on Tariffs and Trade (GATT); originally signed in 1947, this agreement was incorporated into the Uruguay Round agreements that bind WTO Members as the "GATT 1994";
- the Agreement on Trade Related Aspects of Intellectual Property (TRIPS Agreement);
- the Agreement on Technical Barriers to Trade (TBT Agreement);
- the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement);
- the Agreement on Subsidies and Countervailing Measures (Subsidies Agreement);
- the Agreement on Agriculture (Agriculture Agreement); and
- the WTO Understanding on the Settlement of Disputes. (The dispute settlement body and other relevant bodies are discussed under "WTO Forums" below.)

While WTO rules currently require very minimal steps toward liberalisation of investment in the Agreement on Trade-Related Investment Measures, it is possible that stronger obligations will be negotiated in future negotiating rounds.

Appendix III

Regional Fisheries Management Organisations

Regional Fisheries Management Organisations

Non-FAO Regional Fishery Bodies and Commissions include the: CCAMLR (Commission for the Conservation of Antarctic Marine Living Resources), Commission for the Conservation of Southern Bluefin Tuna, Commission Internationale pour l'Exploration Scientifique de la Mer Méditerranée (CIESM), CPPS (Permanent Commission for the South Pacific), EIFAC (European Inland Fisheries Advisory Commission), GFCM (General Fisheries Council for the Mediterranean), GLFC (Great Lakes Fishery Commission), GLIN (Great Lakes Information Network), Indian Ocean Commission (Strategic Reflections on Regional Co-operation in the Next Ten Years), IATTC (Inter-American Tropical Tuna Commission), IBSFC (International Baltic Sea Fishery Commission), Activities reported at some Finnish sites (e.g. The Helsinki Commission), ICCAT (International Commission for the Conservation of Atlantic Tuna), ICES (International Council for the Exploration of the Sea), IOFC (Indian Ocean Fisheries Commission), IPHC (International Pacific Halibut Commission), IPSFC (International Pacific Salmon Fisheries Commission), IWC (International Whaling Commission), NAFO (Northwest Atlantic Fisheries Organization), NAMMCO (North Atlantic Marine Mammal Commission), NASCO (North Atlantic Salmon Conservation Organization), NEAFC (North-East Atlantic Fisheries Commission), NPAFC (North Pacific Anadromous Fish Commission), NPFC (North Pacific Fur Seal Commission), Pacific Salmon Commission, PSMFC - U.S. (Pacific States Marine Fisheries Commission), PICES (North Pacific Marine Science Organization), WECAFC (Western Central Atlantic Fishery Commission), WPRFMC (Western Pacific Regional Fishery Management Council).

FAO Regional Bodies

Asia-Pacific Fishery Commission (APFIC) ***1948.*** The main functions of this Commission are to keep fishery resources in the Indo-Pacific area under review; to formulate and recommend conservation and management measures; to keep under review the economic and social aspects of fishing; to encourage training and research.

Fishery Committee for the Eastern Central Atlantic (CECAF) ***1967.*** The main functions of this Committee are to promote programmes of development for the rational utilisation of fishery resources; to assist in establishing basis for regulatory measures; to encourage training.

Committee for Inland Fisheries of Africa (CIFA) ***1971.*** The main functions of this Committee are to promote programmes of research for the rational utilisation of inland fishery resources; to assist in establishing scientific basis for regulatory measures; to assist in the development of fish culture; to encourage education and training.

Commission for Inland Fisheries of Latin America (COPESCAL) ***1976.*** The main functions of this commission are to promote research for the rational utilisation of inland fishery resources; to assist in establishing scientific basis for regulatory measures; to assist in the development of aquaculture; to encourage education and training.

European Inland Fisheries Advisory Commission (EIFAC) ***1957.*** The main functions of this Commission are to assist in the collection of information; to promote co-operation among

governmental organisations; to advise on the development of inland fisheries.

General Fisheries Commission for the Mediterranean (GFCM) *1949*. The Commission's main functions are to promote the development, conservation and management of living marine resources; to formulate and recommend conservation measures; to encourage training co-operative projects.

Indian Ocean Fishery Commission (IOFC) *1967*. The main function of this Commission is to promote programmes for fishery development and conservation; to promote research and development activities; to examine management problems with particular reference to offshore resources.

Indian Ocean Tuna Commission (IOTC) *1993*. The main function of this Commission is to promote co-operation in the conservation of tuna and tuna like species and also promote their optimum utilisation, and the sustainable development of the fisheries.

Western Central Atlantic Fishery Commission (WECAFC) *1973*. The main functions of this Commission are to facilitate the co-ordination of research; to encourage education and training; to assist Member Governments in establishing rational policies; to promote the rational management of resources of interest to two or more countries.

Advisory Committee on Fisheries Research (ACFR) *1961*. The functions of this committee are to study and advise the Director-General on the formulation and execution of the FAO's work in respect of all aspects of fisheries research including conservation and management of marine and inland fishery resources, increasing fish productivity through enhancement of wild resources and through aquaculture, improving the means of converting fishery resources into human food and study the dynamics of fishing communities and the socio-economic consequences of government fishery policies. Special attention is provided to the fisheries aspects of oceanographic research and to the impacts of environmental change on the sustainability of fisheries. By agreement with the Director-General and in accordance with Resolution 15, adopted at the Second Session of the Intergovernmental Oceanographic Commission of UNESCO, the Committee also acts as the advisory body to that Commission on the fisheries aspects of oceanography.

Co-ordinating Working Party on Fishery Statistics (CWP). The CWP has as its purpose to: (i) keep under continuous review the requirements for fishery statistics for research, policy-making and management, (ii) agree standard concepts, definitions, classifications and methodologies for the collection and collation of fishery statistics, and (iii) make proposals for the co-ordination and streamlining of statistical activities amongst relevant intergovernmental organisations.

IMO/FAO/UNESCO-IOC/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP). The main functions of this group are to provide advice on the scientific aspects of marine environmental protection to the sponsoring organisations on specific questions referred to it; to provide advice to the other organisations of the United Nations system and to the Member States of the United Nations organisations on particular problems referred through a sponsoring organisation; to prepare periodic reviews and assessments on the state of marine environment to identify problems and areas requiring special attention.

Appendix IV

International Agreements Relevant to Sustainability in the Fisheries Sector

Sources: Hanson (1999) and Stone, Downes & de Fontaubert (1999)

UN Convention on the Law of the Sea: The 1982 UNCLOS contains a number of relevant provisions regarding the obligations of states with regard to the conservation and management of marine living resources. Articles 116-120 of UNCLOS address the conservation and management of the living resources of the high seas. Article 117 imposes a general duty to take, or to co-operate with other States in taking such measures for their respective nationals` as may be necessary for the conservation of the living resources of the high seas. Under Article 118, States are to co-operate with each other in the conservation and management of living resources in the high seas, including negotiations on necessary measures where nationals of different states exploit identical resources or different resources in the same area. Article 119 sets out issues to be taken into account in establishing allowable catches or other conservation measures.

Agreement for the Implementation of UNCLOS of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (Straddling Stocks Agreement) *1995*. Canada sought this agreement in the wake of the infamous confrontation with Spain on cod straddling stocks on the Grand Banks. The Agreement is actually for the implementation of a provision already spelled out in UNCLOS (Article 2). Its objective is to ensure the long-term conservation and sustainable

use of straddling fish stocks and highly migratory fish stocks. The Agreement's preamble recalls the provisions of Agenda 21 regarding high seas fisheries and the problems of over-capitalisation and excessive fleet size, and recognises the needs to avoid adverse impacts on the marine environment, to preserve biodiversity, to maintain the integrity of marine ecosystems and to minimise the risk of long-term or irreversible effects of fishing operations. Under Article 5 (h) coastal states and states fishing on the high seas shall "take measures to prevent or eliminate overfishing and excess fishing capacity and to ensure that levels of fishing effort do not exceed those commensurate with the sustainable use of fishery resources". The Agreement specifically endorses the precautionary approach and provides for both inspection and binding dispute resolution. Again, it is not in force and only a handful of the world's leading fishing countries has ratified the Agreement.

FAO Code of Conduct for Responsible Fisheries *1995*. The Code is intended to provide principles and standards applicable to the conservation, management and development of all fisheries. It is global in scope and all States involved in fisheries are encouraged to apply it. The objectives of the Code are to establish principles and criteria for the elaboration and implementation of national policies for responsible conservation of fisheries resources and fisheries management and development. The Code is also intended to promote the trade of fish and fishery products in conformity with the relevant international rules and avoid the use of measures that constitute hidden barriers to such trade (Article 2). Article 6.14 elaborates on this point by stipulating that States should ensure that their policies, programmes and practices related to trade in fish and fishery products do not result in obstacles to this trade, environmental degradation or negative, social, including nutritional impacts. The Code also adopts an ecosystem approach stating that management measures should not only ensure the conservation of target species but also of species belonging to the same ecosystem or associated with or dependent upon the target species (Article 6.2). It also endorses the precautionary approach (Article 6.5). It is a voluntary code with no particular sanctions attached it has been agreed upon by many nations – that are now altering their own legislation and practices. According to Arthur Hanson (1999), this example of a "soft" approach may well prove to be an effective catalyst for change.

Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas *1993*. This FAO agreement will bind countries with high seas fishing vessels to provide important information about the vessels and to ensure compliance with fishing rules. Only half the necessary countries so far have ratified the Agreement.

Agenda 21: Agenda 21 is the consensus document from the Earth Summit on how sustainable development should be implemented. There are various national Agenda 21 plans, strategies and national councils. Chapter 17 on Oceans proposed seven programme areas:

- Integrated management and sustainable development of coastal areas, including exclusive economic zones.
- Marine environmental protection.
- Sustainable use and conservation of marine living resources of the high seas.
- Sustainable use and conservation of marine living resources under national jurisdiction.
- Addressing critical uncertainties for the management of marine environment and climate change.
- Strengthening international, including regional, co-operation and co-ordination.
- Sustainable development of islands.

The basic premise of Chapter 17 of oceans, seas and their adjacent coastal zones forming an integrated whole requiring integrated management – has been reaffirmed in the 1996 and 1999 reviews by the Commission on Sustainable Development (CSD).

Convention on Biodiversity Jakarta Mandate *1995*. At the Committee of Parties to this Rio Convention held in Indonesia in November 1995 a number of principles and guidelines were developed for protecting marine and coastal biodiversity. The Jakarta Mandate sets out general guidelines for applying the CBD to economic activities in marine and coastal areas, such as mariculture and fisheries. While these are not binding, they are helpful in design for marine protected and conservation areas, for aspects of aquaculture, and for the relationship of coastal dwellers and resource users to the new concept of biodiversity protection and utilisation.

Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities – Washington *1995*. This is another soft law initiative that is likely to have a long-term impact in tackling some major sources of marine pollution. It builds upon earlier law such as the 'London Convention' that entered into force in 1978 (Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter).

UN Global Driftnet Moratorium *1992*. A moratorium on high seas drift-netting was declared by the UN General Assembly in 1992. The UN called it a wasteful and indiscriminate practice.

Appendix V

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Footnotes

1. Several recent studies that do address the intersection of trade, sustainable fisheries and sustainable development are Stone et al. (forthcoming), Downes and Van Dyke (1998) and Campbell (1997). In addition, UNEP (1998b) has just completed a series of case studies on trade liberalisation and the environment, including a case study on the fisheries sector in Uganda (UNEP, 1999c). Interest in the intersection of these issues appears to be increasing. The Institute of Cetacean Research in Japan recently hosted a Roundtable Conference on Conservation and Management of Marine Living Resources and International Trade Policy at the 10th Annual Whaling Symposium. Likewise, the University of Washington hosted a Conference on the Influence of Population and Markets on Marine and Coastal Resources in the North Pacific at which several participants focused on the implications of international trade.

2. There are many definitions of sustainable development (one search yielded 61), though many are similar. See Pezzy (1989). The Brundtland Report's definition does however to be the one most often used.

3. For a snapshot of the main issues and proposals that formed the trade and environment agenda from the WTO Marrakech Ministerial to the First WTO Ministerial Conference (in Singapore), see Ewing & Tarasofsky (1997). For a history of the trade and environment debate in the WTO, see WTO (1998b). As of July 1999, 134 States were Members of the WTO. (See < www.wto.org/wto/about/organsn6.htm> for a complete list of WTO Members).

4. For a thorough treatment of GATT/WTO provisions relevant to trade-related environment issues see WTO (1998b).

5. In February 1999 the International Centre for Trade and Sustainable Development hosted a conference to promote understanding of different regional approaches to addressing trade liberalisation and sustainable development. It focused on the role of regional economic integration in promoting convergence of trade and environment policies, as well as on elements that may contribute to such a convergence.

6. The WTO Committee on Trade and Environment (CTE) was created at the Marrakech Ministerial Meeting in 1994. The CTE has both analytical and prescriptive functions: to identify the relationships between trade and environmental measures in order to promote sustainable development, and to make recommendations on whether any modifications to the provisions of the multilateral trading system are required (WTO, 1999).

7. Some activists take the argument much further. Vandana Shiva, for example, argues that "trade liberalisation is becoming the biggest threat to the environment and survival of the poor in India" (emphasis added) (1998:104).

8. There has been hot debate over evidence of industrial migration and pollution levels (Mani & Wheeler, 1998). In practice, the cost of meeting environmental standards usually only constitutes a small part of companies' total production costs and therefore may not play a significant role in the location decisions of companies. While it is possible that trade may be a factor in "the ratcheting-up of standards, as manufacturers seek to expand markets for the products they are required to produce for countries with higher standards", there may be instances where pressure for relocation may be higher, particularly where the costs of environmental compliance are high or rising (e.g., for energy-intensive processing) (Brack, 1998:14).

9. OECD indicates that in areas of regional trade liberalisation, the level of freight transport is expected to increase faster than economic growth in some countries, with the effect of this on the environment offsetting the benefits of economic growth (1994:15).

10. IISD's Trade Principles Working Group is a nine-member group of eminent representatives from the trade, environment and development communities world-wide. Group members were originally drawn together by the Institute in early 1993 to draft a set of principles for trade and sustainable development (The Winnipeg Principles). See IISD (1994) Principles for Trade and Sustainable Development, Winnipeg.

11. See Lecomte & Bernard (1999). See also various ECPDM reports on Lomé, on the web at <www.oneworld.org/ecdpm/en/pubs/acplist.htm>

12. The author would like to thank Caroline Dommen and Ali Dehlavi for significant substantive contributions to this section.

13. Issues relating to fish trade and sustainable development are discussed in more detail in Chapters III and IV.

14. Of the 100 exploited shark species, it is now feared that about 20 are vulnerable, endangered, or critically endangered (TRAFFIC, 1999). The term 'commercially extinct' refers to a situation where there are too few fish of a particular species remaining to warrant the expense of trying to catch them (WWF & IUCN, 1998:20).

15. In the Southern Bluefin Tuna Cases, Australia and New Zealand asked the International Tribunal for the Law of the Sea to declare that Japan had failed "in its obligations under UNCLOS in respect of the conservation and management of Southern Bluefin Tuna, having regard to the requirements of the precautionary principle." See <www.un.org/Depts/los/ITLOS/Tuna_cases.htm>. The Precautionary Principle or Precautionary Approach first emerged in the 1980s and has been reflected in almost all international environmental agreements since the late 1980s including the 1995 Straddling Stocks Agreement (see Chapter, section 4 below). According to the Precautionary Principle or Approach, where a threat of serious or irreversible environmental damage exists, action should not be delayed, even if full scientific certainty has not been established.

16. Exotic species have been introduced by vessels that carry species long distances in their ballast water or on their hulls. The unintentional release of farmed raised fish specimens into the wild has also provoked concern (WWF & IUCN, 1998:23).

17. In some instances, certain elements of an ecosystem itself (rather than human intervention) play a role in fisheries depletion. For example, large and expanding seal populations are seriously affecting some commercial fish stocks off the coasts of Canada, Namibia, Scotland, the U.S., Norway, and western South America (Ben-Yami, 1998).

18. Alison Rieser of the University of Maine School of Law describes how international fisheries law to date has paid only limited attention to connections between fishing and marine biodiversity. She argues that international fisheries norms "must take into account the wider, ecological impacts of fishing, beyond the traditional concern of achieving sustainable yields from exploited fish stocks" and explores how the Straddling Stocks Agreement strengthens international law with respect to marine biodiversity (1997:251).

19. See inter alia Greenpeace (1996), FAO (1999a), ICSF (1997), and Martinez (1998).

20. Excess capacity depletes the amount of fish available. This means that fish harvesters have to dedicate increased effort and resources to retrieve fish which in turn leads to reduced economic returns from fishing activities. Faced with reduced returns, however, many owners of fishing vessels can not exit the fishing sector without major financial loss – particularly because they are unable to sell their boats. So, perversely, the vessel owners keep on fishing, or rather, over-fishing, in order to repay their loans. Caught in an economic trap, they often mobilise significant political pressure on governments not to restrict their access to fish resources.

21. The demise of fisheries has been catastrophic for some local economies. In maritime Canada, for example, the collapse of northern Cod populations in the early 1990s due to overfishing left 30,000 people out of work in Newfoundland. In the Black Sea, the commercial fish catch dropped from 1 million tonnes in 1982 to 100,000 tonnes by 1992, a tenfold drop in a decade (WWF & IUCN, 1998:20).

22. Mukul Sharma explains that in India, "coastal fisherfolk successfully opposed the introduction of foreign fishing vessels in their deep seas through a series of strikes, blockades, demonstration and hunger protests" (1998).

23. Cost savings mostly occur because fleet sizes would be lower (thus also less expensive), and fishing time is shorter (thus operating costs are lower).

24. According to some analysts, if principle fish species in U.S. waters were allowed to rebuild to their long-term potential, sustainable harvesting would provide some 300,000 jobs and add $8 billion to GDP (Myers, 1998: 130 & Sissenwein & Rosenberg, 1993).

25. Straddling stocks are stocks occurring both within and in an area beyond and adjacent to the EEZ – fish with natural migration patterns that take them across the political seaward boundaries established by the EEZ.

26. The roots of this analysis draw on Garret Hardin's argument that the "oceans of the world continue to suffer from the survival of the philosophy of the commons" whereby natural resources are condemned to over-exploitation as individuals do not have sufficient private incentives to protect them (1993:64). It is important to distinguish between the concepts of 'common property' and 'open access'. While open access is generally believed to pose a problem to fisheries, property that is held in common by a community is often seen a positive, potential basis for community-based fisheries management and co-management systems. A full explanation of the theory of the tragedy of the commons is offered in Hardin (1993).

27. Albeit less than in the past: since Exclusive Economic Zones of 200 nautical miles from the coast were introduced, coastal States can regulate fishing activities. Since 90 percent of the world's fish are within EEZs, the open access status of fish has been somewhat reduced. See Chapter 2, section 4 below for discussion of problems in monitoring access to fish resources within EEZs.

28. For a full explanation of the dynamics of open access fisheries, see Arnason (1993).

29. It is important to note that while the enhancement of fishing rights may promote more controlled and rational fish exploitation, this may not automatically lead to greater environmental integrity or conservation of marine ecosystems (McIlgorm, 1996). Even where there are no problems with overcapacity, the task of establishing well-defined property rights is extremely difficult. In many instances, fisheries managers remain preoccupied with the health of the fish stock itself, and inadequate attention is devoted to managing and protecting the ecosystem in which fish are located. For a comprehensive discussion of efforts to allocate fishing rights via individual quotas see Clark et al (1994). For explorations of the impacts of individual quotas on conservation, productivity, socio-economic objectives and small-scale fisheries, see Copes (1996, 1997a, 1998a). Copes also offers discussions of common property fishing rights (Copes, 1997b & 1998b).

30. According to Meltzer: "The articles of the convention read together impose dual duties on states wishing to exercise their right to fish on the high seas: to conserve, and, to co-operate with the adjacent coastal State. Accordingly, Article 116 is interpreted as creating a limitation on the absolute right to fish on the high seas (1993:2). Some countries that have improved management efforts within their EEZs, have failed to make adequate

improvements regarding the activities of their distant water fleets either on the high seas or in other EEZs. For example, while Japan is often criticised for the conduct of its distant water fleet and the subsidies provided to it (Weber, 1997), it also offers several examples of successful management efforts within its EEZ (McNeely, 1998).

31. Here, highly migratory species are those species listed in Annex 1 of UNCLOS. This Annex includes tuna and tuna-like species (billfish, dolphins, and sharks). For a full discussion of the origins and provisions of Straddling Stocks Agreement see de Fontaubert (1996).

32. As of March 1999, only four of the top 20 fishing nations – Russia, Norway, Iceland and the United States – had signed the Agreement.

33. For a thorough account of economic issues related managing fishing capacity and methods of control see (Greboval & Munro, 1998; Hannesson, 1997).

34. Two regional arrangements – the International Commission for the Conservation or Atlantic Tuna and the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) are exceptions. Both have recently authorised the use or trade measures to enforce their decisions. (The use of trade measures is discussed greater length in Chapter 5).

35. Several specialised donor agencies and funds exist to promote developing country participation in, and compliance with, international environmental agreements. The Montreal Protocol on the Ozone Layer, for instance, has a Multilateral Fund to help developing countries reduce production and use of ozone depleting substances. The UNESCO administered World Heritage Fund compensates 'host' countries for conservation efforts they make on behalf of the international community. Likewise, the Global Environment Facility attempts to reimburse developing countries for the 'incremental costs' they incur as a consequence of their participation in the climate change and biodiversity conventions. States may also need to take collective action to mitigate any negative competitiveness effects of improved fisheries management. For developing countries, in particular, acting simultaneously to introduce environmental protection measures may provide particular groups of countries with sufficient market power to incorporate environmental protection costs into product prices and improve their terms of trade (Pearson, 1998:9-22).

36. This scope of this discussion paper is restricted to marine capture fishing for commercial and subsistence use. One additional aspect of marine capture fisheries is sport fishing. In terms of global catch, the proportion of fish caught by sports fishers is small. For some fish, however, the proportion of the resource caught by recreational fishers can be high. The sports fishing industry also generates millions of dollars through support activities such as boating and hotels.

37. There are wide variations amongst countries in fishery labour productivity and in capital intensity. Highly industrialised fisheries generally employ few fishers per unit of output. In 1995, for instance 301000 Japanese fishers produced 6.7 million tons of fish, whereas it took nearly 6 million Indian fishers to produce about 5 million tons of fish.

38. For a discussion of the evolution of small-scale fisheries and the penetration of capitalism see Platteau (1989).

39. The proportion of other commodities that enters international trade is much lower. For example, only 6-8 percent of primary forest products enter international trade (FAO, 1998b:6).

40. In 1996, for example, 195 countries exported part of their production and some 180 countries reported imports (FAO, 1999:19).

41. Figures 1 and 2 highlight that the significance of particular items in fish trade varies depending on whether statistics are presented in volume or value terms.

42. Numerous coastal states have signed agreements providing foreign distant water fishing fleets access to fisheries resources within their EEZs.

43. New Zealand, for example, follows a policy of 'free trade in fishing services'. In 1994, 100 foreign vessels were under charter from DWFNs such as Japan, the Republic of Kore, Poland, Russia and the Ukraine (Kidd, 1994).

44. Downes and Van Dyke (1998) cite the UK/Spain Cod fishing dispute as an example of potential impacts on the fisheries sector of liberalised investment regimes.

45. The origin of fish products is determined by the flag of the fishing vessel that caught the fish, not the place where the fish was caught. For example, fish caught by a Spanish-flag vessel in Moroccan waters would appear in Spanish statistics as national landings rather than traded goods.

46. For example, in the preparation and application of standards and technical regulations, Members shall take account of the needs of developing countries with a view to ensuring they do not create unnecessary obstacles to the expansion and diversification of exports from developing country Members (Article 12). This may involve the provision of technical assistance, ensuring the active participation of developing country representatives in international standardizing bodies, and granting, upon request, specified, time-limited exceptions to obligations under the TBT.

47. The International Collective in Support of Fishworkers (ICSF), an international NGO, is working on issues of concern to fishworkers the world over. A global network of community organisers, teachers, technicians, researchers and scientists, ICSF's activities encompass monitoring and research, training, campaigns and action.

48. The 83 LIFDC countries are defined as nations that are poor and net importers of food. In many cases, particularly in Africa, these countries cannot produce enough food to meet all their needs and lack sufficient foreign exchange to purchase sufficient food on the international market.

49. The overwhelming proportion of fishmeal is of species that could otherwise be used for human food. The key factors preventing this conversion, Howgate argues, are economics and marketing. Recalling the arguments presented by Amartya Sen, Howgate argues people need to have adequate buying power to have food security (1998a). Currently around 30 million tonnes of the total world production of fish (around 121 million tonnes) is reduced to meal. Between 1993 and 1995, two countries, Chile and Peru, contributed about half of this catch, and just 11 countries contributed 86 percent. For critics, it is of particular concern that of these 11 countries, two (Korea DPR and China) are classified a Low Income Food Deficit Countries (LIFDCs) and three others (Chile, Peru and Thailand) as developing countries (Howgate, 1998a:2).

50. Breeding takes place from September to March in the Indian Ocean's warm waters, south of Java, Indonesia. The juveniles then migrate south down the west coast of Australia. When they are 40-50 cm long (Southern bluefin grow to up to 2 metres long and 200 kilograms), they move either east through the Great Australian Bight towards New Zealand, or west through the Indian Ocean towards South Africa.

51. A recent report by Cox et. al. evaluates how effective CITES might be in addressing the key issues which face the international management of southern bluefin tuna (1999).

52. The Compliance Agreement promotes compliance with international conservation and management measures for stocks such as bluefin on the high seas.

53. No particular agreement dedicated to managing the Pacific population of northern bluefin tuna exists, despite the fact that the Pacific Ocean contributes 33 percent of northern bluefin tuna landings (Weber, 1996).

54. Up to 80 percent of the catch may be taken by non-ICCAT fishing vessels flying flags of convenience – some 500 are thought to be hunting bluefin tuna in the Atlantic Ocean. The WorldWide Fund for Nature reports that there have been "[e]fforts to bridge this management gap through co-operation with the General Fisheries Council for the Mediterranean, a management body to which all the Mediterranean countries and Japan are members", but argues that these "have met with little success" (Singh, 1997).

55. In 1995, Italian customs officials reported more than 100 vessels displaying neither flags nor names of vessels. In 1995 at least 8,000 mt of the bluefin caught in the Mediterranean were not reported in any national statistics (Singh, 1997).

56. In late 1998, environmental groups attacked an ICCAT plan to halve the management goals for rebuilding stocks that had been used for the past 23 years (Ocean Wildlife Campaign, 1998). Despite evidence from its own scientific committee that called for a reduction in quotas, the Commission increased catch quotas for Japan, the U.S. and Canada (Ocean Wildlife Campaign, 1998). ICCAT also established a total allowable catch for Eastern Atlantic bluefin for 1999-2000 that, although lower than in previous years, "its own scientific committee has determined is not sustainable" (Ocean Wildlife Campaign, 1998).

57. For more information on the CCSBT, see <www.home.aone.net.au/ccsbt/index.html> and <www.dpie.gov.au>.

58. TRAFFIC Oceania argues that "[t]he total annual catch, now set at 11,750 tonnes, should be reduced by 35 percent to help ensure the number of breeding fish return to safe levels by the year 2020" (1997).

59. There are difficulties with reducing the uncertainty of stocks assessments and encouraging countries to properly report their catches and on questions such as the number of SBT caught at each age in the total catch.

60. For the requests for Provisional Measures by Australia and New Zealand, and the Tribunal's August 1999 order for Provisional Measures, see <www.un.org/Depts/los/index.htm>

61. There appear to be no official estimates of what volume and/or value of the total annual catch from West African waters is caught by EU fleets. It is also difficult to say how much more foreign fishing there is in West Africa due to the subsidies that these agreements constitute ñ presumably, some foreign fishing would have taken place also in the absence of the EU agreements (this is borne out by the fact that some private companies have also entered into private agreements with West African countries). IUCN has recently conducted a series of case studies that review linkages between international trade, fisheries and biodiversity in West Africa. They provide an useful source of recent data on the fisheries sector in, for example, Senegal, Mauritania, and the Gambia (Diop, 1998; Samb, 1998; Saine, 1998).

62. Civil society groups dissatisfied with these fishing agreements have also called for 'third generation' agreements that include specific environmental and social aid and considerations.

63. A number of African countries have adopted "15-20 percent of the commercial value of the catch as the rate for fishing fees in their national legislation on foreign fleet access to their exclusive economic zones" (Porter, 1998b:35). ICSF suggests that: "In many ways, fisheries agreement substitute for the lack of coherent national policies for communities, workers and industries dependent on fishing. They also substitute for the lack of a policy on what to do with large, distant water fleets of Member States such as Holland, Spain, Portugal, France and Greece. These would otherwise become part of the [existing] overcapacity of fleets fishing in [European] community waters" (1998d).

64. The point here is not that developing countries should necessarily allocate all of this compensation specifically to fisheries – as this depends on national priorities – but simply to point out that one cannot assume that the compensation for fishing access is targeted to improving regulation or management in the fisheries sector.

65. One analyst argues that it should not be surprising "if officials of the ministries which reap significant benefits from the Euro-African fishing agreements are willing to agree to EU negotiating demands that are harmful to the sustainable management of natural resources" (Porter, 1997:5; Porter, 1998b:54).

66. A 1999 WWF Report highlights that: "some governments of industrialised countries have already carried out national reviews of regional and multilateral trade agreements. The European Union is currently drafting the terms of reference for a "sustainability impact assessment" of the next round of negotiations in the WTO; Canada has called for collaboration between WTO Members to initiate an environmental review of the future trade negotiations; and the U.S. has offered previous experience of such reviews garnered in the context of the NAFTA agreement" (1999:1).

67. It is important to consider the unique implications of open access fisheries. In the fisheries sector, one can not assume hat lower prices are worse than higher prices. One effect of high domestic prices for fish caught locally may indeed be to constrain domestic consumption, but if not constrained by effective quotas high prices may also increase fishing efforts.

68. This move broke a long period of deadlock in which the EU "made the liberalisation of trade in fish and fishery products incumbent on obtaining fishing rights in the fishing zones of countries seeking access to its market" (FAO, 1995:iii).

69. Economists differentiate between effective and nominal rates of protection. For commodities that have freely traded intermediate inputs or that are sold in the same form that they are traded (e.g., trade in live fish that are sold with no further processing or packaging) the nominal rate of protection is a good indicator. However, many final commodities (e.g., canned tuna) are produced with the use of intermediate goods that are subject to tariffs (e.g., raw tuna). The effective rate of protection refers to the positive or negative value-added in the production of a commodity. For example, if the tariff on the output exceeds the tariff on the input, the effective rate of protection will be higher than the nominal tariff (e.g.,where tariffs on processed fish products are higher than tariffs on raw fish products).

70. It is important to note that many developing countries also engage in activities to protect their domestic fisheries industries. For example, Brazil, the Republic of Korea, Thailand and Venezuela as well as a collection of West African States among others require import licenses and apply import quotas for fish and fishery products.

71. This chart lists the tariff rates applied to countries under normal trading relations (i.e., most favored nation status). Most countries have different preferential rates that are applied to different countries, but these are not necessarily comparable lists. This list offers a selection of tariff rates for particular products that feature prominently in international trade. The EU tariff rates shown are the conventional rates of duty applicable from 1 July 1997. These duties are applicable to imported goods originating in countries which are Contracting Parties to the GATT or with which EU has concluded agreements containing most favored nation provisions. The Japanese tariff rates shown are the schedules for imports applicable from 1/1/99 in compliance with the tariff reduction agreement of the Uruguay Round. These apply to most countries other than those granted preferential treatment. The U.S. tariff rates shown are the most favored nation rate (what is now called the rate applied for normal trading relations). Tariff rates may differ for certain countries belonging to, for example, NAFTA, Israel Free Trade Agreement, or the Generalized System of Preferences.

72. EU Tariffs on Herring vary according to the season.

73. EU Tariffs on Mackerel also vary according to the season.

74. The Conventional EU tariff rate varies depending on the type of shrimp between either 18 percent or 12 percent.

75. Thailand, for example, reduced its tariffs on fresh, chilled or frozen fish in order to provide raw material at a lower cost to its processing industry, in the view of raising its exports of canned products such as canned tuna and canned salmon and other processed fish. Despite unchanged high tariffs applied on these products by importing countries such as the USA and EU, this move should allow Thailand to take a large share of the world market (and even larger if it can benefit from GSP schemes for those products) (FAO, 1995).

76. See Matteo Milazzo (1998) and Christopher Stone (1997) for further discussion of estimates of fisheries subsidies.

77. Schorr offers two explanations for why the trade impacts are more speculative: "First, unlike the link between subsidies and overcapitalisation – where the absence of precise causal analysis is to some degree compensated by the simple correlation between subsidies and the explosive growth of the world's fishing fleets – no dramatic 'macro' trend in fish-based trade flows has an obvious link to current subsidies. Second, the entire economics of the link between domestic (as opposed to export or anti-import) subsidies and trade distortions is hotly debated, as is evidenced by the nuanced approach to the subject of the WTO system and its antecedents" (Schorr, 1998:169)

78. Interest in the impact of perverse subsidies on the environment is high. The Earth Council's Van Lennep Programme on Economics and Sustainable Development is bringing together a consortium of environment and sustainable development organisations to pursue work on perverse subsidies. The project will focus on economic sectors such as energy, transport, agriculture, fisheries and mining, as well as ecosystems such as drylands, grasslands, forests, inland waters, and marine and coastal. The VLP Programme will conduct research into the impacts of subsidies, advocate the assessment and redesign of subsidy structures; and assist governments in policy reform. See the Earth Council site at <www.ecouncil.ac.cr/econ>. A 1998 publication from the International Institute for Sustainable Development also lays out the scale and scope of perverse subsidies in agriculture, fossil fuels/nuclear energy, road transportation, water, and fisheries (Myers, 1998).

79. There is, however, considerable scepticism regarding the effectiveness of such schemes. Some analysts caution that these schemes may inadvertently infuse more productive capital into the sector and, as such, should be used only under very limited circumstances (Steenblik & Gordon, 1999. Decommissioning and buyback schemes are often considered to be a second best response to management failures and some have attracted significant criticism as an ineffective means of using scarce government funds. First, there may be incentives for fishers to sell excessive capacities to operators in developing countries. When Canada, for example, bought up redundant gear as part of its 1996-97 Pacific Salmon Revitalisation Scheme, it sold some of the gear to developing countries in order to help reduce the overall cost of the scheme. Second, many schemes are put in place (in combination with subsidies for new construction and modernisation of fleets) with the main aim of increasing the turn-over of capital in the fleet, not to encourage fleet reduction. Moreover, to the extent that vessel decommissioning schemes are seen as permanent fixtures (or the normal response to over-capacity) they reduce risk and in so doing may encourage more new investment.

80. APEC's Fisheries Working Group is exploring fisheries sector trade and investment liberalisation in the areas of tariffs, non-tariff measures, investment measures, and subsidies. Ending subsidies to traded fisheries products is a priority of Pacific Economic Co-operation Commissions' (PECC) Task Force on Fisheries Development and Co-operation. A special project on fishing subsidies was launched as a consequence of a PECC symposium, held in New Zealand, in November 1996, to increase recognition of links between fisheries management practices and international trade in fisheries products. Subsequently, in August 1998, the PECC Task Force organised a workshop on the impact of government financial transfers on fisheries management, resource sustainability and international trade (Steenblik & Gordon, 1999:7). Currently, the OECD Fisheries Committee is addressing support to the fisheries sector in the context of two activities: (i)the Review of Fisheries in OECD Countries; and (ii)a study on "The impact on fisheries resource sustaina-bility of government financial transfers" (Steenblik & Gordon, 1999:5). Fishing subsidies are also being addressed at the FAO in the context of two activities: (i)FAO's new Plan of Action for the Management of Fishing Capacity; and (ii)an ongoing study being undertaken for the Sub-Committee on Fish Trade. The WTO's Committee on Trade and Environment has been considering fisheries subsidies for several months. The United States and New Zealand have both made submissions to the committee that highlight the negative impact of subsidies in fisheries from a conservation stand point. In March 1998, the WTO Secretariat presented a paper examining GATT/WTO rules on subsidies and aids granted in the fishing industry. The UN Commission on Sustainable Development (1996) has also urged governments to "reduce subsidies to the fishing industry and abolish incentives leading to overfishing" (para. 21(c)).

81. The fisheries sector is not governed by the WTO's Agreement on Agriculture which contains regulations dealing with subsidies in the agriculture sector. The fisheries sector was excluded from the negotiations on the Agreement on Agriculture, and is covered by the more stringent WTO Agreement on Subsides (FAO, 1998c:4). According to the Subsidies Agreement, countries may impose countervailing measures to compensate for subsidies given by other states. However, subsidies in the fisheries sector have rarely provoked countervailing measures. One example of how such measures can be used is the special duties that the U.S. and EU have imposed on salmon from Norway and Chile (FAO, 1998c:4).

82. For a fuller assessment of the potential of each of these channels see Porter (1998b:71) and Schorr (1998). Steenblik (1999) offers a review of previous multilateral efforts to discipline subsidies to natural resource-based industries.

83. Serious prejudice as defined under the Agreement includes, for example, where the subsidy covers an industry's operating losses, provides for direct forgiveness of debt, or causes displacement of imports of another Member's like products into the subsidising Member's market or a third country's market.

84. From the perspective of allowing trade in some species, but disallowing trade in all species, CITES itself classifies quantity restrictions or quotas as "trade facilitating" measures. This terminology breaks with the standard use of quotas, and suggests differences in assumptions between conservation and trade policies, starting with CITES' perspective that free trade would be a sub-optimal policy choice given trade-related species risk (Vaughan and Dehlavi, 1998).

85. The Straddling Stocks Agreement says that "[s]tates may adopt regulations empowering the relevant national authorities to prohibit landings and transshipments where it has been established that the catch has been taken in a manner which undermines the effectiveness of subregional, regional or global conservation and management measures on the high seas" Article 23 (3). The Protocol on Substances that Deplete the Ozone Layer (1987) (Montreal Protocol), provides another example. It restricts trade in ozone depleting chemicals and provides for the exchange of information and technology relating to substitutes for ozone-depleting substances. The Protocol's overarching goal is to protect the ozone layer by taking measures to control global emissions of ozone-depleting substances. It does so by binding Parties to phased reductions in production and use of substances that are known to deplete the ozone layer, leading to phaseouts for most such chemicals. The 1990 meeting of the Parties also created the Multilateral Fund for the Implementation of the Montreal Protocol. It was the first such fund established under an environmental agreement.

86. Given statistics that some Contracting Parties to ICCAT had exceeded their catch limits and in recognition of the importance of catch limits to the conservation of Atlantic bluefin tuna and north Atlantic swordfish, ICCAT recommended several steps to improve compliance. First, a country that exceeds its catch limit is expected to explain how the over-harvest occurred, and the actions already taken, or to be taken to prevent further over-harvest. Second, if a country exceeds its catch limit, that limit will be reduced in the next subsequent harvesting period by 100 percent of the amount in excess of the catch limit. Third, if the Contracting Party exceeds its catch limit during any two consecutive management periods, appropriate measures may include, but are not restricted to, reduction in the catch limit equal to 125 percent of the excess harvest, and if necessary, import restrictions on the subject species, consistent with each Party's international obligations (ICCAT, 1996).

87. At the 23rd Meeting of the FAO's Committee on Fisheries (COFI) in February 1999, the issue of IUU and flags of convenience were highlighted as areas of particular difficulty for existing international management efforts. COFI recommended that expert and technical consultations be held in order to develop an international programme of action on both of which are likely to consider trade measures as a tool to promote compliance with the provisions of existing international fisheries agreements and RFMOs.

88. To date, the only time that import prohibitions have been imposed under the Pelly Amendment (as distinct from threatened) was against Taiwan, from August 1994 to June 1995. In that case, Taiwan's trade in rhinoceros and tiger parts was judged to diminish the effectiveness of CITES. The issue of GATT sanctioning the ban did not arise because Taiwan was not a GATT contracting Party.

89. The United States for example has the so-called Pelly Amendment which provides for the application of foreign trade sanctions in support of international environmental agreements.

90. There are several other possibilities open to the international community to protect endangered species. There are other international treaties and agreements such as the International Convention for the Regulation of Whaling (1946) and the Convention on the Conservation of Migratory Species of Wild Animals (1983) which could provide models for other species, short of having them CITES listed.

91. Indeed, one of the major reasons for public concerns about involvement in international trade agreements is the argument that these can impose "considerable limits on the ability of governments to establish" (Pearson, 1998:11-22). Daniel Esty notes that the "trading system historically has been quite vulnerable on this point, facing regular attacks because of the perception that a secretive cabal of "faceless international bureaucrats" may be gaining authority and decision-making power over regulatory issues that should be subject to democratic and accountable processes at the national level (1998:128). These attacks are further reviewed in Esty (1994). The Case Against Free Trade: GATT, NAFTA and the Globalization of World Power (Nader, 1993) is a compilation of articles that raise the popular fears about free trade.

92. The introduction of Hazard Analysis Critical Control Point (HACCP) systems have attracted considerable concern among some developing countries. There are strong fears that HACCP systems will represent potential non-tariff barriers to trade, especially in the case of non-modern production facilities (FAO, 1998c:1). On the other hand, the FAO points out that "the public health costs of foodborne diseases incurred by all countries are often so high, that the benefits of introducing HACCP almost certainly outweigh them" (FAO, 1998c:1). The following governments and seafood industries have adopted or decided to adopt HACCP procedures: Argentina, Australia, Bangladesh, Brazil, Canada, Chile, Cuba, Ecuador, Iceland, Ireland, Morocco, New Zealand, Norway, Peru, Sri Lanka, Thailand, Uruguay, United States, and Vietnam. Most members of the EU have also tried to introduce HACCP-like procedures via regulations (Cato, 1998).

93. For an general exploration of the relationship between environmental protection/ regulations and competitiveness see Panayotou (1997).

94. It is important to note that the TBT definition of standards differs from the definition of standards utilized by the ISO. Standards as defined by ISO may be mandatory or voluntary.

95. The National Treatment Principle (Article III) forbids Members from treating foreign products less favourably (for example through more stringent regulation) than domestic "like products". The Most-Favoured Nation (MFN) principle (Article I) aims to prevent Members from treating products imported from one WTO Member less favourably than "like products" from another Member (Articles III and I).

96. As a result, environmental trade measures based on distinctions between products based on their production or processing methods (PPMs) that do not in any way influence the physical characteristics of the products themselves have been found to violate these obligations (See Section 1.6.4.).

97. For instance, because of fundamental climatic, geographical, technological and infrastructural factors; national security requirements; the prevention of deceptive practices; and protection of human health and safety, animal or plant life or health, or the environment. (TBT, Article 2.4. and 5.4.).

98. While the TBT includes a specific statement that a technical regulation is applied in accordance with a relevant international standard is presumed not to create an unnecessary obstacle to trade (TBT Article 2.5), there is no similarly specific statement in the TBT or its Annexes on this issue with respect to standards. On the question of whether a particular standard is in accordance with relevant international standards lies, the TBT does not indicate with whom the burden of proof lies. If a dispute did arise, there could be questions about: 1) whether a standard is in accordance with the relevant international standards; and 2) what constitutes a relevant international standard.

99. TBT Annex 3 does not specify precisely among whom the national consensus needs to be achieved. Presumably, the consensus should be among other relevant national standardizing bodies, but also with government, industry and NGOs (such as environmental and consumer organisations).

100. This would include ensuring that an enquiry point exists which is able to answer all reasonable enquiries from other Members and interested parties and to provide documentation at an equitable price (if any) regarding adopted or proposed standards and technical regulations as well as conformity procedures (Article 10.1 and 10.4.). If a Member reaches agreement with another country or countries on issues related to technical regulations or standards which may have significant effects on trade, they are required to notify the Secretariat of the products covered by the agreement and provide a brief description of the Agreement (Article 10.7.).

101. For example, in the preparation and application of standards and technical regulations, Members shall take account of the needs of developing countries with a view to ensuring they do not create unnecessary obstacles to the expansion and diversification of exports from developing country Members (Article 12). This may involve the provision of technical assistance, ensuring the active participation of developing country representatives in international standardizing bodies, and granting, upon request, specified, time-limited exceptions to obligations under the TBT.

102. This language goes beyond the language of Article XX(b) in that it refers explicitly to the environment. Article XX(b) has, however, been interpreted by GATT and WTO panels to encompass measures generally considered environmental within its language referring to measures "necessary to protect human, animal or plant life or health."

103. Also see Cameron & Ward (1993), Vaughan & Dehlavi (1998) and WTO (1995).

104. The Centre for Science and Environment (CSE), an NGO based in India, opposes the use of trade sanctions to conserve the global environment, arguing that economically powerful nations have the unfair advantage of being able to impose effective trade sanctions against less economically powerful nations (CSE, 1996 & 1998). CSE condemned, for example, the U.S. ban on importation of shrimp and shrimp products from India, Malaysia, Pakistan and Thailand, but also targeted the Indian government for laxity in the enforcement of its own laws relating to sea-turtle conservation.

105. For example, in June 1992, Austria enacted new legislation "subjecting all tropical timber imports to mandatory eco-labelling and an 8-70 percent "eco-tax" to finance international projects for sustainable forest management: After Malaysia, on behalf of all ASEAN members states, raised the issue in the GATT Council and (without actually filing a formal complaint) hinted at foreign trade retaliation, the Austrian parliament rescinded the law in December 1992" (Sand, 1995).

106. CITES, for example, provides opportunities for countries to co-operate to regulate trade and effectively helps exporters manage problems that some developing countries would otherwise have difficulties with (e.g. such as policing their borders).

107. There have also been proposals to transfer environment-trade disputes (like Tuna-Dolphin) to an institution separate from the GATT/WTO that can advance both economic development and environmental protection. For example, Jeffrey Dunoff, a Professor of Law, notes the tendency of the trade regime to subordinate environmental interests to trade interests when the two come into conflict, and discusses the viability of other adjudicatory responses as the International Court of Justice (1994).

108. There is an ongoing debate regarding the interplay of the global trade regime, and global environmental protection agreements. There is considerable discontent with the way that environmental issues and agreements have been handed within the WTO. Daniel Esty (1994) discusses the GATT's legitimacy, technical capacity, and neutrality in cases that involve environmental issues and has since called for a new Global Environment Organisation to help promote simultaneous achievement of trade and environment goals (Esty, 1999). For discussions of efforts to "green" international trade policies, the role of civil society and recent efforts by environmental NGOs to participate in and influence international trade policy-making in institutions such as the WTO see Esty (1998).

109. Some environmental advocates have argued that the stipulation that trade measures must be "necessary" in order to be allowable under Article XX is proving too restrictive. Daniel Esty, for example, argues that the reading of the 'necessary clause' as requiring that environmental policies be 'least trade restrictive', appears to put a very high, and many would say unreasonable, hurdle in front of environmental policymakers (1999). The problem, from an environmental point of view, is that there is almost always some less trade restrictive policy option available. If trade restrictions are employed, there is always an option of using an environmental label. If an environmental label is used, there was always the option of providing environmental education. The edge of this slippery slope can never be reached. Thus, the search for a substantively neutral set of GATT rules to guide the clash between trade and environmental goals should begin with a administratively-agreed upon definition of "necessary" as employed in Article XX, to mean "not disproportionate". Under this test, and environmental policy that appeared to be in tension with trade goals would be accepted as legitimate if it were found to have a basis in science and to have trade impacts that were not disproportionate to the environmental gains being sought" (Esty, 1999:7).

110. Several organisations submitted amicus briefs to the WTO on the Shrimp-Turtle dispute. These include the World Wildlife Federation (WWF) (1997), Center for International Environmental Law (CIEL)/Center for Marine Conservation (CMC), and Earth Island Institute/Human Society of the United States/Sierra Club.

111. For more information on eco-labelling and sustainable fisheries, see Deere (1999a).

112. According to the MSC, "A sustainable fishery is defined, for the purposes of MSC certification, as one that is conducted in such a way that: it can be continued indefinitely at a reasonable level; it maintains and seeks to maximise ecological health and abundance; it maintains the diversity, structure and function of the ecosystems on which it depends as well as the quality of its habitat, minimising the adverse effects that it causes; it is managed and operated in a responsible manner, in conformity with local, national and international laws and regulations; it maintains present and future economic and social options and benefits; and it is conducted in a socially and economically fair and responsible manner". See <www.msc.org>.

113. To date, the MSC has received eight applications from organisations to become accredited certifiers.

114. Nineteen fisheries are currently candidates for MSC certification, and several test cases for fisheries certification are underway. These include the Western Australia Rock Lobster Fishery, the Thames Blackwater Herring Drift Net Fishery and the Dutch North Sea Herring Fishery.

115. See <www.aquariumcouncil.org/>

116. The RFS and GAA programmes are open to all segments of the industry (e.g., producer, importer, distributor, retailer or restaurant operator) and require the preparation of reports or plans that document implementation of the RFS/GAA principles. The RFS programme targets all types of domestic US seafood products while GAA focuses initially on farm-raised shrimp on a world-wide basis.

117. See <www.gaalliance.org/GAA-RFSecolabel.html>

118. ISO's mission is to promote the development of standardisation and related activities in the world with a view to facilitating the international exchange of goods and services, and to developing cooperation in the spheres of intellectual, scientific, technological and economic activity.

119. ISO 14000 is a series of international, voluntary environmental management standards. Developed under ISO Technical Committee 207, the 14000 series of standards address the following aspects of environmental management: Environmental Management Systems (EMS), Environmental Auditing & Related Investigations (EA&RI), Environmental Labels and Declarations (EL), Environmental Performance Evaluation (EPE), Life Cycle Assessment (LCA), and Terms and Definitions (T&D). (For further details, see http://www.tc207.org/faqs/index.html) . This series does not prescribe environmental performance levels. Rather, to claim compliance with ISO 14000 standards, firms are required to establish an environmental policy and to set targets and objectives for environmental management performance. ISO tends to be attractive to industry because it supports voluntary, market-based, measures as against traditional government command-and-control measures.

120 General principles for environmental labels and declarations were published in 1998 and standards for Type I eco-labels in April 1999. The ISO is developing standards for three different types of eco-labels. Type I eco-labels are those based on voluntary multi-criteria product life-cycle assessment of environmental effects; verification is through a third party. Standards for Type II (self-declared environmental claims) and Type III (specialised third party schemes using quantified product information labels and pre-set indices) eco-labels are still under development. For further details see ISO (1998) and ISO (1999).

121. Paragraph 4.21 of Agenda 21.

122. Cathy Wessells of the University of Rhode Island has recently completed a consumer survey of U.S. seafood consumers, with a focus on determining if U.S. consumers have a preference for eco-labelled seafood, and are willing to pay for it. A report on the results of the survey can be found at <www.riaes.org/resources/library>.

123. The FAO reports that for organic products a price premium of 10-20% is not difficult to obtain (and examples of premiums of as much as 50% have been reported). Premiums for certified forest products are estimated to be in the range of 5-10%. See FAO (1998h). A recent report by the MacArthur Foundation (1999:24-25) also discussed eco-labelling in the forestry sector and provided evidence of the price differential that eco-labels have created in that sector.

124. See OECD (1997c). This paper focused on the following eight eco-labelling schemes: EU Eco-label Award Scheme, Swedish Environmental Choice, Nordic Swan, Canadian Environmental Choice Programme, Blue Angel, Green Seal, Japanese Eco Mark, and NF Environment. Most of these programmes are focused on products which reduce environmental damage during the use and disposal phase such as various types of detergents, cleaning agents and paper products. They encourage the use of recycled products and limit consumption of non-renewable resources. A limited number of eco-labels include requirements exclusively related to environmental effects which occur during the production phase (e.g. water effluents, air emissions). Few of the eco-labels in the selected schemes were developed for products of specific export interest to developing countries. The exception is the Nordic Swan programme which includes production related criteria which favour ecological cotton growing.

125. Drawing on case studies from the timber and organic foods sector, Kristin Dawkins (1996) provides substantial evidence that eco-labelling can be successful in meeting environmental objectives. She argues that, on balance, green products sell well and concludes that eco-labelling schemes enhance consumer education, and set minimum standards for environmentally-sound and socially just performance among other things.

126. Technical standards have been frequently used in the fisheries sector and have at times raised concerns about protectionist intents (FAO, 1998b:7; Wessells, 1998). There are strong fears that the introduction of Hazard Analysis Critical Control Point (HACCP) systems will represent potential non-tariff barriers to trade for some developing countries, especially in the case of non-modern production facilities (FAO, 1998c). Fears that such measures can disguise protectionist intent led the members of the WTO to negotiate a series of agreements that regulate the use of non-tariff measures, including the Agreement on Sanitary and Phytosanitary Measures (SPS Agreement) and the Agreement on Technical Barriers to Trade.

127. An excellent overview of the issues for developing countries is provided by Zarrilli et al (1997). The book brings together the papers presented by UNCTAD in June 1994 on possible effects of eco-labelling on export competitiveness and developing country firms' access to markets in developed countries.

128. See for example, UNCTAD (1994).

129. Amjadi & Yeats (1995), Gupta, R.K. (1997) and Matthew, S. (1997).

130. Efforts are being made to address this problem by governments and through bilateral and multilateral assistance. The MSC has also stated its goal of ensuring that its Principles and Criteria can be applied in an appropriate manner in fisheries where there is limited information and where management and compliance regimes may be based on traditional community structures. Personal e-mail communication from Jonathan Peacey, Fisheries Director, MSC, October 1, 1999.

131. The WWF Endangered Seas Campaign and WWF US Marine Program have recently developed a proposed methodology for certification in community-based fisheries in part to address criticism that initiatives such as the MSC may disadvantage small-scale fishers from developing countries. They seek to generate 10 certified fisheries in marine eco-regions of broad geographical distribution in the next 3 years. Explicit goals are to test the potential of certification to create incentives for rationale resource exploitation and biodiversity conservation and to reward small-scale fishers for sustainable marine resource management. For more information see WWF (1999).

132. Most marine fisheries face the well known difficulty of achieving and sustaining collective action that is necessary because of the large number of participants and the persistence of open access conditions. It is possible that sufficient pressure from industry should induce governments to act. It is also possible, however, that industry has difficulty getting organised, and that government is unresponsive to industry pressure. See Willmann (1997).

133. There have been particular questions about the consequences of ecolabelling schemes for exports from small scale fisheries in developing countries that may not be able to afford certification costs (Matthews, 1998a). The Government of Malaysia has emphasised that "developing countries need financial and technical assistance to be able to undertake the necessary adjustments" to enable them to adhere to ecolabelling requirements (1999:3). There are concerns that the submission of developing countries to the standard set by global or Northern labelling schemes could be a potential source of competitive disadvantage (Shams, 1995:145). Jim Cato of Florida's Sea Grant College Program argues, for example, that: "[s]ince 50 percent of the world's seafood now is exported from developing countries, and developed countries import most of the seafood, the cost of higher safety and eco-labelled standards will be borne by the developing countries which can least afford to implement them. Fishing practices will be changed to attain eco-labelled standards. This will likely lead to more internal controls within the fishing enterprises to lower costs and maintain control. The result will be less involvement by individual fishermen and economic hardships. A comparative example is the movement in Bangladesh of local peeling sheds for shrimp into the processing plants, where there is more control. The result will be safer shrimp, but a loss of jobs to local people in a low-income country. This was partially stimulated by a ban on imports of Bangladesh seafood into the EU because of safety concerns. The shrimp industry lost $US 14.6 million, because of the ban. In the future, local shrimp peelers will lose incomes" (Cato, 1998). In cases where governments either fail to act or act inappropriate to mange fisheries, the fishing industry may be penalised due to lower sales prices in the absence of certification.

134. Importantly, the TBT Committee of the WTO has indicated that mandatory labelling requirements are subject to the notification provisions of Article 2.9 of the TBT Agreement, regardless of the kind of information that is presented. See G/TBT/1/Rev.3.

135. There is ongoing concern and debate about what the term all "constitutionally available" measures actually requires of governments.

136. For example, the 1991 Tuna-Dolphin GATT dispute panel held that trade restrictions based on the process of creating a product, and not on specific qualities of the product qua product, are inconsistent with GATT.

137. See, for example, CTE (1996).

138. See footnote 126.

139. The 1987 Montreal Protocol on Substances that Deplete the Ozone Layer is one multilateral environmental agreement that currently explicitly addresses the issue of both product and non-product related PPMs.

140. For a detailed discussion of the issues surrounding the eco-labelling date, and possible contents and format of technical guidelines on ecolabelling of products from marine capture fisheries see FAO (1998d).

141. The task of agreeing on an unambiguous definition of a sustainable fishery complicates ecolabelling ventures. The bio-ecological, economic and social complexity and diversity of marine fisheries requires the elaboration of a large number of criteria including those applied to specific regions, countries and fisheries. This requirement could result in high certification costs which might only be avoided at the expense of opening the door to arbitrariness and the creation of loopholes in inspection and monitoring (Willmann, 1997). Global certification standards may not be able to capture the different relative national and regional weights given to conservation, economic, social and cultural sub-goals and may thus work to the disadvantage of particular groups. If on the other hand, fishery or country-specific certification standards were elaborated to fit the particular requirements of different communities, this may jeopardise the credibility of labelling schemes in the eye of conservation-oriented consumers confused by different schemes, and not wishing to compromise environmental goals (Willmann, 1997).

142. If the prices of labelled and unlabelled products differ significantly, it may make the introduction of competing labelling schemes attractive. The challenge will be to ensure that certification procedures of these schemes verify that the source of the labelled products are indeed well-managed fisheries. In the timber industry, for example, eco-labelling of forest products proliferated in the 1980s. In a sample of 80 of such labels, a 1992 survey by the WorldWide Fund for Nature found that only three could offer any evidence to back up their claim of environment friendliness (cited in Willmann, 1997). Multiple labelling schemes may increase the costs to consumer of being adequately informed on the environmental properties of a products. This in turn may lead to credibility problems. For example, labelling schemes instituted by developing countries themselves might have the disadvantage of low credibility among Northern consumers.

143. It is possible that the private sector will redirect those products to eco-sensitive markets which can become certified at low cost, and to direct other products to eco-insensitive markets (Willmann, 1997). This possibility becomes clearer if one considers that most of the future growth in global fish demand, however, will be in Asia, Latin America and Africa (where consumers are less likely to respond positively to eco-labels, especially if eco-labelled products are higher priced) and the growing role of South-South trade (FAO, 1998c; Willmann, 1998). Moreover, there are possibility that in certain situations, eco-labels can lead to increased sales of products made by both environmentally friendly and environmentally unfriendly methods (Mattoo & Singh , 1994).

144. For information about this campaign see Seaweb which has been running a campaign against the overfishing over Swordfish on the East Coast of the United States <www.seaweb.org>.

145. The national foreign debt and debt servicing obligations as well as private debt of fishing vessels owners play a powerful role indriving overfishing. The role of debt, export credit agencies and multilateral and regional development banks in the fisheries sector should also be explored, as well as the role of governments in relieving private debt of fishing vessel owners and how this impacts the level of fishing activity and employment. Research could be focused on the role RFMOs might play in the development of co-operative regional strategies that address conservation goals, employment and economic concerns, access to resources and national competitiveness.

146. The potential for significant impacts on the long term productivity of fisheries suggests that sustainability assessments at the national, regional and international level should be integral parts of future trade negotiations on the fisheries sector. A number of questions demand further consideration:

- Would further liberalisation lead to a realignment of trade flows or an increase in trade volumes?
- Would it lead to an expansion of fish harvesting and production or rather changes in the pattern of which regions and countries dominate fish harvesting and production?
- How will different kinds of liberalisation efforts impact the fisheries sector?
- Will liberalisation of trade enhance or undermine effective management?
- Can it facilitate excessive natural resource depletion or stimulate more efficient use of resources?