Fisheries, International Trade and Sustainable Development
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<tr>
<td>ACP</td>
<td>Asian, Caribbean and Pacific</td>
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<tr>
<td>ADA</td>
<td>Anti-dumping Agreement</td>
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<td>ADB</td>
<td>Asian Development Bank</td>
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<td>APEC</td>
<td>Asia-Pacific Economic Co-operation</td>
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<td>ASCM</td>
<td>Agreement on Subsidies and Countervailing Measures</td>
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<td>CARICOM</td>
<td>Caribbean Community and Common Market</td>
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<td>CBD</td>
<td>Convention on Biological Diversity</td>
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<td>CCAMLR</td>
<td>Commission for the Conservation of Antarctic Marine Living Resources</td>
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<td>CCGP</td>
<td>Codex Committee on General Principles</td>
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<td>CCSBT</td>
<td>Commission for the Conservation of Southern Bluefin Tuna</td>
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<td>CFP</td>
<td>Common Fisheries Policies</td>
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<td>CITES</td>
<td>Convention on International Trade in Endangered Species of Wild Fauna and Flora</td>
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<td>COMESA</td>
<td>Common Market for Eastern and Southern Africa</td>
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<td>COOL</td>
<td>Country of Origin Labelling</td>
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<td>CTE</td>
<td>Committee on Trade and Environment</td>
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<td>DSB</td>
<td>Dispute settlement body</td>
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<td>DWFN</td>
<td>Distant water fishing nation</td>
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<td>EBA</td>
<td>Everything But Arms</td>
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<td>EC</td>
<td>European Commission</td>
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<td>EEZ</td>
<td>Exclusive Economic Zone</td>
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<td>EPA</td>
<td>Economic Partnership Agreement</td>
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<td>EU</td>
<td>European Union</td>
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<td>FAD</td>
<td>Fish aggregating device</td>
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<td>FAN</td>
<td>Friends of Anti-dumping</td>
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<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<td>FDA</td>
<td>Food and Drug Administration</td>
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<td>FDI</td>
<td>Foreign direct investment</td>
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<td>FFA</td>
<td>Forum Fisheries Agency</td>
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<td>FOC</td>
<td>Flag of Convenience</td>
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<td>FPA</td>
<td>Fisheries partnership agreement</td>
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<td>FWG</td>
<td>Fisheries Working Group</td>
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<td>GATS</td>
<td>General Agreement on Trade in Services</td>
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<td>GATT</td>
<td>General Agreement on Tariffs and Trade</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GRT</td>
<td>Gross registered tonnes</td>
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<td>GSP</td>
<td>Generalised System of Preferences</td>
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<td>HACCP</td>
<td>Hazard Analysis Critical Control Point</td>
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<td>HS</td>
<td>Harmonised Commodity Description and Coding System</td>
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<tr>
<td>ICCAT</td>
<td>International Commission for the Conservation of Atlantic Tunas</td>
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<td>ICLARM</td>
<td>World Fish Center (formerly the International Center for Living Aquatic Resources Management)</td>
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<td>ICTSD</td>
<td>International Centre for Trade and Sustainable Development</td>
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<td>ILO</td>
<td>International Labour Organization</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>IMO</td>
<td>International Maritime Organization</td>
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<td>IPOA</td>
<td>International Plan of Action</td>
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<td>ISO</td>
<td>International Standards Organization</td>
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<td>ITC</td>
<td>International Trade Commission</td>
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<td>ITLOS</td>
<td>International Tribunal for the Law of the Sea</td>
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<tr>
<td>ITO</td>
<td>International Trade Organization</td>
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<tr>
<td>ITQ</td>
<td>Individual transferable quota</td>
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<tr>
<td>IUU</td>
<td>Illegal, unreported and unregulated fishing</td>
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<tr>
<td>IWC</td>
<td>International Whaling Convention</td>
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<tr>
<td>JICA</td>
<td>Japanese International Co-operation Agency</td>
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<tr>
<td>LDC</td>
<td>Least-developed country</td>
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<td>LIFDC</td>
<td>Low income food-deficit country</td>
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<tr>
<td>LRFF</td>
<td>Live reef food fish</td>
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<tr>
<td>MFN</td>
<td>Most-favoured Nation</td>
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<td>MEA</td>
<td>Multilateral environmental agreement</td>
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<td>MPA</td>
<td>Marine protected area</td>
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<td>MRAG</td>
<td>Marine Resources Assessment Group</td>
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<td>MSC</td>
<td>Marine Stewardship Council</td>
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<td>MSY</td>
<td>Maximum sustainable yield</td>
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<td>NAFTA</td>
<td>North American Free Trade Agreement</td>
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<td>NAMA</td>
<td>Non-agricultural Market Access</td>
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<tr>
<td>NGO</td>
<td>Non-governmental organisation</td>
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<tr>
<td>NTM</td>
<td>Non-tariff measure</td>
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<tr>
<td>OECD</td>
<td>Organization for Economic Co-operation and Development</td>
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<tr>
<td>PIC</td>
<td>Pacific island country</td>
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<tr>
<td>PPM</td>
<td>Process and production methods</td>
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<td>RFMO</td>
<td>Regional fisheries management organisation</td>
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<td>SBT</td>
<td>Southern Bluefin tuna</td>
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<td>SDT</td>
<td>Special and differential treatment</td>
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<td>SPS</td>
<td>Sanitary and phytosanitary standards</td>
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<tr>
<td>SSA</td>
<td>Southern Shrimp Alliance</td>
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<tr>
<td>TAC</td>
<td>Total Allowable Catch</td>
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<tr>
<td>TBT</td>
<td>Technical barriers to trade</td>
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<tr>
<td>TCFA</td>
<td>The Catfish Farmers of America</td>
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<tr>
<td>UNCED</td>
<td>United Nations Conference on Environment and Development</td>
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<td>UNEP</td>
<td>United Nations Environment Programme</td>
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<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
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<tr>
<td>VMS</td>
<td>Vessel monitoring system</td>
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<td>WCO</td>
<td>World Customs Organization</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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<tr>
<td>WSSD</td>
<td>World Summit on Sustainable Development</td>
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<td>WTO</td>
<td>World Trade Organization</td>
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FOREWORD

Trade in fish and fishery products has a real potential to advance socio-economic development around the globe. Fish trade has expanded tremendously in recent decades and has almost doubled in the past ten years. Exports flow primarily from developing to developed countries, accounting for up to three-quarters of merchandise exports in some countries. Fisheries provide a source of direct and indirect employment for 200 million people. The vast majority of these people live in the developing world where the sector is dominated by artisanal and small-scale fishing operations. The industry also plays a crucial role in advancing food security, supplying much-needed protein in some of the poorest countries as well as income necessary to purchase food.

This potential, however, has to be placed within the broader context of prevailing viability constraints that - if not addressed - will jeopardise the productivity and survival of the world’s fisheries and the millions of people that depend on them for their livelihoods. With three-quarters of fish resources already under threat, this prospect is becoming a reality in some parts of the globe. Fish trade - where it provides an incentive for increasing fishing efforts beyond sustainable limits in the absence of an effective management regime - clearly exacerbates these pressures. Similarly, fisheries subsidies that have enabled industrial fleets to exploit fishing grounds around the world have significantly contributed to global fish stock declines.

Trade policy can provide a range of tools to help take advantage of opportunities while mitigating some of the pressures. Eco-labelling, for instance, could provide necessary market advantage to compensate for investments in sustainable fisheries. Well-targeted subsidies could foster development of poor fishing communities provided that they do not lead to unsustainable fishing efforts. At the same time, if not designed well, these tools can undermine sustainable development objectives by encouraging over-exploitation, unnecessarily restricting trade and jeopardising livelihoods. Market standards and the use of safeguards continue to prevent the poorest countries in particular from taking advantage of trading opportunities. Fisheries access agreements, where they do not include adequate catch limits and enforcement mechanisms, can lead to the long-term decline of fisheries resources at the expense of local fishermen.

To ensure that fish trade indeed delivers on sustainable development objectives, policy-making at the multilateral, regional and local levels will need to reflect and balance the varied priorities and concerns. To date, however, the policy debate has been characterised by a fragmentation of issues, actors and perspectives. While negotiations on regulating fisheries subsidies have attracted considerable attention at the WTO, other areas with a direct bearing on the fisheries sector - such as market access, non-tariff barriers, and measures taken under multilateral environmental agreements - remain neglected and understudied. Policy responsibilities for the various aspects of the fisheries-trade interface are spread across different ministries and institutions with limited coordination between them. At the same time, many stakeholders - among them those with the greatest stake and interest in the debate, including fishermen, traders, conservationists and fisheries analysts - are frequently not heard and effectively integrated in policy formulation.

As part of the ICTSD project on International Trade, Fisheries and Sustainable Development, this Policy Discussion Paper aims to help foster an inclusive and informed process for crafting multilateral, regional and domestic trade rules and policies in the fisheries sector that are supportive of sustainable development. To this end, the paper provides a comprehensive assessment of the complex set of trade policy issues and tools that bear on the sustainability and development of the fisheries sector. It does so through the lens of sustainable development: How will trade policy tools such as tariffs, subsidies, standards or eco-labelling impact on the pursuit of public policy objectives related to social development, employment and food security? Under what conditions
will these tools foster or undermine the long-term viability of fisheries resources? How will the use of the various policy tools influence countries’ ability to secure export revenues and preserve the profitability of the fisheries sector?

This paper is not meant to be an academic exercise nor does it propose specific recommendations; rather, it aims to provide a framework for those making and influencing policies to better understand and analyse how key trade policy issues and tools in fisheries relate to and impact on their sustainable development objectives. By providing a comprehensive yet applied basis for debate and analysis, the paper endeavours to help bridge the divide between the different communities and enable dialogue among the different actors and areas. We would like to encourage our readers to take this document as a starting point for further analysis of their specific fishery and country contexts which will provide the necessary basis for identifying their interests and priorities towards integrated policies and negotiating positions in this area.

We hope that you will find this Policy Discussion Paper to be stimulating and useful reading.

Ricardo Meléndez-Ortiz
Chief Executive, ICTSD

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This Policy Discussion Paper was prepared as part of the project on Fisheries, International Trade and Sustainable Development being implemented by the International Centre for Trade and Sustainable Development (ICTSD). The project aims to contribute to the crafting of multilateral and regional trade rules and policies related to the fisheries sector that are supportive of sustainable development. The activities of the project have been made possible through the support of the Dutch Ministry of Foreign Affairs and the New Zealand Ministry of Foreign Affairs and Trade.

The lead authors of this policy paper are Carolyn Deere (Senior Researcher at the Global Economic Governance Programme, University of Oxford) and Elizabeth Havice (doctoral candidate and National Science Foundation Fellow at the Department of Environmental Science Policy and Management, University of California-Berkeley).

Substantive overview of the paper was the responsibility of Heike Baumüller and her colleagues at ICTSD, including Ricardo Meléndez-Ortiz, Christophe Bellmann, Hilde Ludt, Sarah Mohan and Ruth Fend.

The paper draws on years of reflection and debate on the complex interlinkages between trade, fisheries and sustainable development at ICTSD (see, for example, Deere, 2000; Dommen, 2000a, b). The authors and ICTSD would like to thank the many people who have provided critical input into this paper. Devising the terms of our analysis benefited greatly from a series of issue studies prepared for this project by leading fisheries and trade experts - Mahfuz Ahmed, Frank Asche, Fahmida Khatun, Stephen Mbiti Mwikya, Cathy Roheim and Jon Sutinen. We would also like to thank the participants in our dialogue series for sharing their perspectives and knowledge with us. We are particularly grateful to the many readers who have provided their valuable comments on draft versions of the paper, notably Hachim El Ayoubi, Liam Campling, William Emerson, Darlan Fonseca Marti, Aimee Gonzales, Ytha Kempkes, Veronique Marx, Sebastian Mathew, Stephen Mbiti Mwikya, Ivan Prieto Bowen, David Schorr, Alicia Stephen and Anja von Moltke who joined us in Geneva for a day of intensive and enriching discussion and review.

The final product is the result of the collective efforts of the persons involved. However, the ICTSD team assumes sole responsibility for its contents.
EXECUTIVE SUMMARY

Fisheries Trade, Sustainability and Development

The Food and Agriculture Organization of the United Nations (FAO) estimates that 75 percent of fisheries is significantly depleted, over-exploited or fully exploited (FAO, 2004a). A number of factors have contributed to these trends. Poor fisheries management and inappropriately designed subsidies to fishing industries have been widely recognised as key drivers of over-exploitation of fisheries resources by contributing to significant overcapacities of fishing fleets, particularly in developed countries.

At the same time, the demand for fish and fishery products continues to rise. Consumption of fish has doubled since 1973 and production has soared accordingly to meet the burgeoning demand (Delgado et al., 2003). Developing countries account for a large part of both consumption and production, producing nearly three times as much fish as developed countries. Much of the growth has come from aquaculture production, which now accounts for almost a third of total production by weight (FAO, 2004a), while production from wild fisheries has slowed or stagnated despite growing investment in fishing capacity. As a result - and in contrast to most animal-origin foods - real prices of most fish and fishery products (not produced through aquaculture) have risen over the past 60 years.

Fish are also one of the world’s most highly traded commodities. Almost 40 percent of fish output by value is traded internationally - primarily from developing to developed countries - with an export value of US$ 63 billion in 2003 (Emerson, 2005). Seafood is now one of the most traded commodities in the world (FAO, 2004a). In the developing world, exports of fishery products make up 20 percent of their agricultural and food-processing exports - more than tropical beverages, nuts, spices, cotton, sugar and confectionary combined (World Bank, 2004). Expected increases in prices for fish and fishery products could have potentially significant ramifications for the availability of fish for food use as well as fishmeal, which provides an important source of livestock feed in some countries.

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. For developing countries, the fisheries sector is a major source of export revenue, a key dietary input and an important provider of local livelihoods. Nearly a billion people worldwide depend on fish as their primary source of dietary protein (Schorr, 2004). Further, small-scale fisheries form a significant part of the fisheries sector (though their actual contribution to total capture fishery products remains difficult to estimate) (FAO, 2004b). In the past several decades, bilateral fisheries access agreements between developed and developing countries have emerged as a critical part of trade-relations between developed and developing countries. While these agreements have the potential to help build capacities in developing countries and maintain fishing communities in developing countries, they can also fuel over-exploitation of fisheries resources in developing country national waters by distant water fleets that are provided access under the agreement while reducing the competitiveness of the local industry.

The fisheries sectors in many of the poorest countries often face serious obstacles to expanding their participation in international trade and diversifying production and exports towards value-added processed products. These barriers include tariff escalation, stringent standards, countervailing measures and rules of origin requirements in export markets as well as domestic supply-side capacity constraints. In addition, fisheries subsidies in
developed countries have contributed to market distortions, reducing developing countries’ ability to compete with subsidised fleets and often making it economically unviable for poor countries to build up their own fisheries industries.

Trade liberalisation in the form of subsidy cuts and reduced tariff escalation may 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. On the other hand, while some countries may gain from expanding fisheries trade, some portion of their populations, 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.

Alongside these considerations exists a debate about the environmental impacts of expanding fisheries trade. On the one hand, expanding international trade may further strain the sustainability of fish stocks and the marine environment where resources are not effectively managed or regulated. Moreover, some trade laws and policies may impede efforts to reduce pressures that drive overfishing. The global market does not currently contain feedback loops that ensure that environmental costs and sustainability concerns are recognised and internalised. There is, for example, 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. Some argue that growth in aquaculture production and trade could mitigate some of the pressures on the resources and provide opportunities for expanding domestic industry. To be sustainable, however, the sector will need to address livelihood considerations, including the likelihood of market concentration at the expense of small-scale industries and the environmental impacts, such as pollution from aquaculture pens or the use of wild fish as fishmeal and oil for use as feed in aquaculture production.

On the other hand, the opportunity to generate profits and foreign exchange from increased trade could be one way to focus the minds of some countries on the need to ensure sustainability as a way to safeguard long-term economic opportunities. In some instances, trade measures have been proposed as possible avenues to address some of the drivers of fish stock depletion, including the use of import controls, traceability systems and labelling schemes which take into account developing countries’ capacity constraints to implement and comply with such measures.

**Purpose and outline of this Policy Discussion Paper**

Fish stocks, the marine environment, and the fishing communities and industries that rely upon them, face unprecedented challenges. Despite the enormous economic and environmental issues at stake, the linkages between international trade, fisheries sustainability, environmental protection and socio-economic development remain poorly understood and inadequately addressed. At present, international discussions of the challenges that arise at the nexus of trade, fisheries and sustainability are spread across a vast array of international organisations, international and regional agreements on environment, trade and fisheries, regional fisheries management organisations and other international processes.

This policy discussion paper identifies three broad public policy objectives relevant to policy-making in the fisheries sector: (i) profitability and the generation of export
revenue; (ii) resource sustainability and environmental protection; and (iii) socio-economic development, including employment, livelihood and food security and coastal development. When engaging in discussion of trade policy, it is vital that policy-makers recognise and address the interplay of these three sets of objectives. While opportunities for synergy may arise, there may also be times when compromise and trade-offs must be accepted.

To advance towards better outcomes for sustainable development, this policy discussion paper aims to provide policy-makers, scientists, advocates, journalists and those engaged in the fishing industry with an overview of the key linkages, tensions and policy debates at the intersection of fisheries and international trade. The paper does not advocate a particular perspective or make recommendations; rather it endeavours to highlight different views and options for policy-making. It should be seen as a starting point for debate that provides a conceptual framework for further in-depth analysis on specific policy areas and how they should be addressed in particular country and fishery contexts.

The paper proceeds in two parts. Organised around the three broad public policy objectives outlined above, Part One reviews the key economic, environmental and social factors that influence the management, harvest, production and trade of fisheries resources, calling attention to emerging trade trends and the precarious state of fisheries resources. Part Two reviews the key trade-related areas of international policy debate relevant to the fisheries sector: tariff liberalisation; safeguards and anti-dumping; standards and other non-tariff barriers; ecolabelling; subsidies; access agreements; and trade-related measures to promote fisheries management and environmental protection. Each of these chapters follows a similar format, identifying the policy issue at hand, the relevant background, the key policy debates and tensions, and the relevant international processes. The paper concludes with a summary of the linkages between trade policy issues and sustainable development priorities, and a set of proposals for further research.
PART ONE
1 THE CONTEXT

1.1 Introduction to international fisheries trade

The fisheries sector is one of extremes. International trade in fish and fishery products is a US$ 63 billion-per-year industry. Around the world at least 200 million people are employed in fisheries-related jobs - mostly in developing countries. For many coastal communities in both developed and developing countries, the fishing industry is the foundation of their livelihoods and local economy. In addition, fish is a vital component of food security for many of the world’s poorest people.

As governments and industry strive to expand their share of the potential economic returns from this sector, they face a stark reality. Overfishing affects all but four of the world’s key fishing regions - at least 75 percent of the world’s fish stocks is harvested at or beyond their limits (FAO, 2004a). In the past decade, the rapid growth of aquaculture has also been accompanied by a range of social and environmental challenges. Both governments and industry thus face the difficult task of balancing the desire for economic growth and sustained employment with the imperative of ensuring long-term resource sustainability.

The international policy and legal framework applicable to fisheries, international trade and sustainable development is dispersed among a variety of treaties, instruments, management schemes and economic policies that operate at international, regional and national levels. As international fisheries trade grows, governments, industry and fishers face the reality of a complex web of international trade, environmental policy and legal instruments - some of which are mutually supportive, others of which are difficult to reconcile. Many developing countries have limited capacity to engage effectively in the negotiating processes and policy formulation at the domestic, regional and multilateral levels.

As policy-makers approach decision-making related to fisheries, they tend to have one or more broad policy objectives in mind. This chapter is organised around three such objectives which have a prominent influence on the fisheries sector: (i) profitability and the generation of export revenue; (ii) resource sustainability and environmental protection; and (iii) socio-economic objectives such as employment, livelihood and food security and coastal development. For each of these policy objectives, the chapter sets out key relevant fact and trends. Importantly, the chapter emphasises that the various policy objectives are linked and impact each other - highlighting the need for policy-makers to understand the risks and returns associated with prioritising different policy strategies.

1.2 Overview of policy objectives and strategies in the fisheries sector

Objective 1: Profitability and export revenue

International trade plays a significant role in the fisheries sector. Over the past 30 years, international trade has grown significantly and over 50 percent of the value of fisheries production and almost 40 percent of the live weight equivalent now enter international trade (see Figure 1.1). In 2003, the total export value of world trade of fish and fishery products reached over US$ 60 billion - almost double that of 1992. In terms of quantity, in 2003, exports of fish and fishery products reached 50 million tonnes (live weight equivalent) - over 40 percent higher than a decade earlier (FAO, 2004a).
The growth in international trade has been spurred on by a combination of international demand for fishery products, increased aquaculture production, and demand for fishmeal for use as animal feed, aquaculture and agriculture (FAO, 1999). In addition, technological advances including the introduction of cargo freezers, new transportation and harvest equipment and improvements in food science contributed to the growth of trade, while also increasing the quality, safety and array of fishery products available.

The increasing economic importance of fisheries trade has prompted growing interest in understanding and influencing the international and national policy frameworks that govern this trade. For many countries engaged in international fisheries trade, the key trade policy priority is to ensure an international policy framework that increases their market access, improves profitability and promotes development of their national fisheries sector. Countries engaged in the export of fishery products have a keen interest in national regulatory changes in importing countries, including those related to labelling requirements, changes in quality and safety control measures and traceability. Fisheries producers also have a strong interest in international trade negotiations at the World Trade Organization (WTO) concerning fisheries subsidies and further tariff liberalisation, the expansion of regional trade areas and the increasing number of bilateral trade, development and access agreements (FAO, 2004c). They also have a natural interest in trade-related measures undertaken to enhance fisheries management and environmental sustainability. At the same time, governments engaged in international trade face a growing set of concerns about the impact of over-exploitation of certain fish stocks and the sustainability of aquaculture on long-term profitability and industry growth.

The following discussion highlights some of the key trends in fisheries trade. To set the context, it begins with a broad overview of trends in global fisheries production, consumption and demand.

**Growing demand…who wants fish?**

Demand for fish and fishery products has increased over the past decade. Worldwide, average apparent per capita consumption of fish, crustaceans and molluscs has increased by some 20 percent since 1992. Much of this rise in consumption is accounted for by developing countries, as population growth and rising incomes have led to increased demand in many
developing countries, particularly Asia. In developed countries, the relative consumption of fish protein (compared to other kinds of other animal protein) has remained relatively stable since the early 1990s. Demand for quality frozen and fresh fish and crustacean, however, is expected to grow due to greater awareness of health issues and higher incomes (Sen, 1994).

The most important fish-consuming region is Asia. Europe is the second largest food fish-consuming continent. The lowest levels of consumption occur in Africa and the Near East (FAO, 2004a).

In the coming decade, demand for fishery products is expected to be sustained or to further increase. Based on projected population growth and on the maintenance of present world consumption levels, demand could reach 120 million tonnes per year by 2010 (compared to 75 to 85 million tonnes produced in the mid-1990s).

Box 1.1: Where are fish caught?

Ninety percent of the world’s fish stocks is landed within the national waters of coastal states and it is here that the vast majority of fishing and overfishing takes place. In 1982, the 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). These EEZs cover 40 percent of the world’s oceans and 90 percent of its living marine resources – they grant coastal states sovereign rights to explore, exploit, conserve and manage resources within their EEZ. Beyond EEZs are the high seas - open-access common resources. Over the past several decades, the percentage of the world fish catch taken from the high seas has been growing (from about 5 percent in 1980 to between 10 and 20 percent in 2003 (Gjerde and Breide, 2003).

The most productive fishing area of the world is the Northwest Pacific (where the main stocks are the Japanese pilchard (or sardine) and Alaska pollock), followed by the Southeast Pacific (where three species account for around 80 percent of total catches: the Peruvian anchoveta, the Chilean jack mackerel and the South American pilchard (or sardine)). This area suffers, however, from large catch fluctuations as a consequence of periodic climatic events associated with the El Niño effect. Also among the top fishing areas are the Northeast Atlantic and the Western Central Pacific.

Source: FAO (2004a)

Who produces fish?

Total world fish production has grown steadily over the past decade (see Figure 1.1). This increase in production has been possible despite shrinking catches in many fisheries, thanks to increases in landings off the west coast of South America (e.g. of sardines, anchoveta, and chub mackerel) and the expansion of aquaculture (FAO, 2004a). The growth of fish production in China has also made a significant contribution - its share of world fish production increased from 16 percent in 1992 to 33 percent in 2002 (see Box 1.4).

In 2002, the top capture fisheries producers were China, Peru, the United States, Indonesia, Japan, Chile, India, the Russian Federation, Thailand and Norway (see Table 1.1 and Box 1.1). While developing countries contributed only 40 percent of production in capture fisheries in the 1950s and 1960s, today they produce more than 70 percent.
Also in 2002, aquaculture accounted for 30 percent of total fisheries production by weight (up from only 4 percent in 1997) (see Box 1.2 and Figure 1.2). The top aquaculture producers are China, India, Japan, Philippines, Indonesia, Thailand, Korea, Bangladesh and Vietnam. Since 1970, aquaculture has grown at an average rate of 8.9 percent per year (compared to only 1.2 percent for capture fisheries). China is by far the largest aquaculture producer (aquaculture accounts for nearly 70 percent of China’s total fisheries production).

### Box 1.2: The growth of aquaculture production

In 2002, the value of total world aquaculture production (including aquatic plants) was reported to have reached US$ 60 billion (FAO, 2004a). Aquaculture’s contribution to global supplies of fish, crustaceans and molluscs continues to grow, increasing from 3.9 percent of total production by weight in 1970 to 29.9 percent in 2002. Aquaculture continues to grow more rapidly than all other animal food-producing sectors. The major aquaculture products are carps, oysters, mollusks and clams, followed by salmon, tilapias, mussels, shrimp, prawns and scallops.

Aquaculture production of fish, crustaceans and molluscs is growing fastest in developing countries, at an average annual rate of 10.4 percent per year since 1970 compared to an average rate of 4 percent per year over the same period for developed countries. In 1970, developing countries accounted for 58.8 percent of production, while in 2002 their share had risen to 90.7 percent. In 2002, countries in Asia - including India, Indonesia, Japan, Bangladesh, Thailand and Vietnam - accounted for 91.2 percent of the production quantity and 82 percent of the value. Of the world total, China is reported to produce 71.2 percent of the total quantity and 54.7 percent of the total value of aquaculture production. The most significant growth rates over the past few years have been observed in Chile, followed by Chinese Taipei, Brazil, Canada and Myanmar.

In some instances, growth in the aquaculture sector has been stimulated by government efforts that ensure access to credit, provide fiscal incentives, and remove institutional constraints by establishing effective aquaculture administrative frameworks (Bushman et al., 2002). At the micro or farm level, governments have intervened with start-up policies such as financing research, providing stocking material and extension and advisory services and credit (World Bank, 2004).
Fish for what?

In 2002, over three-quarters of the estimated world fish production was used directly for human consumption (FAO, 2004a). In particular, the share of live or fresh fish has increased considerably in the preceding ten years from 20 (17 million tonnes) to 30 percent (26 million tonnes) of total production (excluding China).

Processed fish production has remained largely constant in terms of quantity (39 million tonnes), with just over half constituted by frozen fish. Within that period, frozen fish production in developing countries increased from 13 to 42 percent of total production.

While most of the exports from developing to developed countries consist of raw material

Box 1.3: The challenges of measuring fish trade

International trade in fish and fishery products is measured in an unusual way. The origin of fishery 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 Spanish national 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 means 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. Moreover, 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. 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 appear considerably more significant than it does currently.

Source: Deere (2000)
for processing industries, they are increasingly shifting to high-value live fish or value-added products (FAO, 2004a). Between 1990 and 2000, the export value of preserved and prepared fishery products from low income food-deficit countries (LIFDCs) rose from US$ 5.39 billion to US$ 10.62 billion, which translates into an increase in the share of exports from 0.13 percent to 0.23 percent (Kurien, 2004). It is important to bear in mind, however, that such aggregates do not provide information on whether these increases have been dominated by a few countries and/or large-scale processors.

Who imports and exports fish?

Although over 180 countries are involved in the international trade of fish and fishery products, trade is dominated by a few nations (see Box 1.3 for how fish trade is measured). Overall, developing countries’ share of both exports and imports has grown significantly since 1970 (see Figure 1.1).

Imports: Developed countries account for the vast majority of the total value of imports of fishery products (see Figures 1.3 and 1.4). In
2003, 75 percent of imports was concentrated in the three largest importing blocs - Japan (at 22 percent of world fish imports worth US$ 13.6 billion), the United States (US$ 10 billion) and the EU (with Spain being the world’s third largest importer of fish at the value of US$ 3.9 billion).

Exports: In 2002, developing countries, who export around one-quarter of their combined production, provided the greatest share of total fishery exports - 49 percent by value and 55 percent by quantity in 2002 (see Figure 1.5). Developed countries’ exports correspond to nearly 70 percent of their production (although a part of this trade may be re-exports). By value, the top exporters of fish and fishery products are China, Thailand, Norway, the United States, Canada, Denmark, Spain and Vietnam (FAO, 2004a). The role of China and Vietnam has particularly grown over the past decade (see Box 1.4 on China).

Interestingly, LIFDCs are also often important fish exporters. In 2002, LIDFCs fishery exports amounted to US$ 13 billion (more than 20 percent of the total value worldwide) (Lem, 2003). Revenues generated from the exports of fishery products can be vital to LIFDCs to service foreign debt and to pay for other needed commodities, such as food and fuel, as well as to generate income and employment.

While there is relatively little trade between developing countries in fish and fishery products, the share of trade between them grew from 9 percent in 1976 to 13 percent in 2003 (Emerson, 2005). Chile and Peru, for example, export fishmeal to export-oriented fish farms in India, Indonesia, Malaysia, the Philippines and Thailand. In many countries there is considerable two-way trade in fishery products. Thailand and the Philippines, for example, import sardines and mackerel from Latin America for processing and canning which they then re-export to developed country markets (McGinn, 1998).

In 2002, some 95 countries were net exporters of fish and fishery products, with Canada, Chile, Norway, Thailand and Vietnam reporting net export values of more than US$ 1.5 billion each and Denmark, Iceland, India, Indonesia, Peru and Chinese Taipei having net exports worth more than US$ 1 billion each (FAO, 2004a).

For many developing nations, fisheries-related trade and production are vital to national
economic growth (see Table 1.2). In some instances, fisheries can also represent a crucial source of foreign currency earnings. For example, fishery exports represent more than 75 percent of total merchandise exports for Iceland, the Faeroe Islands, Greenland, Maldives and Seychelles. In a further 20 countries, including Chile, Ecuador, Kiribati, Madagascar, Mauritania, Morocco, Mozambique, Namibia, Peru and Senegal, fisheries exports account for between 75 and 10 percent of total merchandise exports (FAO, 2004a).

Fish exports are also increasingly important to developing countries relative to other agricultural commodities. In 2002, the net

<table>
<thead>
<tr>
<th>Country</th>
<th>Fisheries exports as % of GDP</th>
<th>Country</th>
<th>Fisheries exports as % of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh (1997)</td>
<td>3.1</td>
<td>Solomon Is (1999)</td>
<td>12.8</td>
</tr>
</tbody>
</table>

receipts of foreign exchange derived from fish in developing countries reached US$ 17.4 billion (i.e. the total value of their exports less the total value of their imports), up from US$ 11.6 billion in 1992. Significantly, net fisheries exports are far higher than those for many of the high-profile developing country agriculture exports, such as rice, coffee and tea (see Figure 1.6).

Importantly, many developing countries are working to move their participation in fisheries production and trade away from the export of raw material for the processing industry in developed countries towards trade in high-value live fish or value-added, processed products (FAO, 2004a; see Box 1.5). The goal of these efforts is to increase the profitability of fisheries resources and thus the contribution of the fisheries sector to the gross national product. As noted above, some developing countries are importing raw material for further processing and re-export. There has also been greater development aid devoted to fish-processing activities in developing countries. Many developed countries have invested in processing facilities in developing countries where costs are lower.

![Figure 1.6: Developing country net exports of commodities](source: Emerson (2005))

**Which fishery products matter most in international trade?**

Fishmeal, fish oil and frozen fish play a growing role in international fisheries trade. The increased volume of international trade in fishery products in recent years is largely due to higher trade in lower value commodities such as fishmeal and fish oil - particularly from developing countries. Frozen fish also plays an increasingly important role in international trade - growing from 28 percent of exports in 1992 to 35 percent in 2005.

Developed countries mostly trade demersal species (such as cod, hake, haddock, and Alaskan pollack in fresh, frozen whole and fillet form), low-value pelagic species (such as herrings traded in fresh and frozen forms), mackerel and salmon (fresh and frozen). Developing countries primarily export unprocessed fresh or frozen whole tuna, canned fish such as tuna and small pelagics, and crustaceans and molluscs (such as shrimp and rock lobsters) in fresh, frozen or processed form. A significant share of developing country exports consists of the raw product for fishmeal (e.g. Peruvian anchoveta). Developing country imports are mainly raw material such as frozen tuna for further processing and re-
export as well as cured, dried and smoked fish and fishmeal (see Tables 1.3 and 1.4) (FAO, 2004a).

### Other forms of trade in the fisheries sector

International trade in the fisheries sector also includes trade in fisheries services and inputs (including fishing vessels, technology, technical advice and equipment). Common types of trade in fisheries services include foreign vessel charters (and sometimes crew) by a domestic producer and vessel trade whereby countries which decommission old vessels later sell them to developing countries. There is also an international trade in rights of access to fishing grounds sold to foreign distant water fishing fleets by many coastal developing countries that lack the capacity to fully utilise their fish resources (Access Agreements are discussed at length in Chapter 7). Some coastal communities also depend heavily on international tourism for recreational fishing or eco-adventure when, for example, fishers are willing to pay high fees to

<table>
<thead>
<tr>
<th>Product</th>
<th>% of Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shrimp</td>
<td>18</td>
</tr>
<tr>
<td>Groundfish (hake, cod, haddock, pollock)</td>
<td>10</td>
</tr>
<tr>
<td>Tuna</td>
<td>9</td>
</tr>
<tr>
<td>Salmon</td>
<td>8</td>
</tr>
<tr>
<td>Fishmeal and fish oil</td>
<td>5</td>
</tr>
</tbody>
</table>

**Table 1.3:** Value of fisheries trade by type of fish

Source: FAO (2004a)

<table>
<thead>
<tr>
<th>Fishery Product Type</th>
<th>% of Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frozen fish</td>
<td>35</td>
</tr>
<tr>
<td>Prepared/preserved</td>
<td>12</td>
</tr>
<tr>
<td>Live/fresh</td>
<td>10</td>
</tr>
<tr>
<td>Cured</td>
<td>5</td>
</tr>
</tbody>
</table>

**Table 1.4:** Value of fisheries trade by fishery product

Source: FAO (2004a)

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**Box 1.5:** Adding value and achieving economies of scale

Countries hoping to increase returns from their fisheries assets often face difficulties overcoming the cost of entering markets for value-added goods and ‘scaling’ up production. Adding value to existing resources is widely seen as a vital strategy for maximising returns to producers while also reducing pressures to overfish. To achieve these goals, countries need both an enabling international policy framework and appropriate national policies. At the national level, key challenges include:

- **Infrastructure constraints.** Value-added products require costly infrastructure including fish landing centres, processing facilities, potable water supply, housing, sanitary and environmental engineering structures, refrigeration capacity, roads, electricity, telecommunications, and efficient transportation.
- **Limited capacity to comply with international standards:** Producers need technical and financial support to comply with health and sanitary standards.
- **Institutional constraints.** Many developing country institutions lack the technical capacity and know-how to assess fisheries trade policies and their impact on fish supply chains, stakeholders and processing industries. Institutional constraints also hamper efforts to ensure local producers meet fish and seafood quality standards at the minimal cost.

Source: Ahmed (2006)
catch 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 on resources and the environment) (FAO, 1996).

Finally, the size, distribution and impacts of foreign direct investment (FDI) can influence the intensity of fishing operations and capacity. First, with global economic integration, some firms from different stages of production within the fisheries industry have merged with each other. In the aquaculture industry, for example, hatcheries and on-growing sites have been known to merge with fish distributors. This form of increased vertical integration may also expand to processing and marketing activities in the industry. In other instances, large distributors sometimes sell their stake in harvesting and processing - preferring to outsource or subcontract in favour of focusing their global business on marketing or distribution (Schurman, 1998).

A second phenomenon is the rise of joint ventures between firms in different countries (Hamlisch and Moore, 1975). 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 (Swartz, 2000). Morocco, Namibia, Mozambique and Argentina have each, for example, promoted joint ventures between their domestic industry and foreign firms as a way to support local industry (Hamlisch and Moore, 1975). Some analysts draw attention to problems that can arise with such joint ventures. In Namibia, for example, fleets from industrialised countries have set up joint ventures in which they provide the equipment, expertise and part of the crew to Namibian-owned (partly or fully) companies which receive preferences when fishing quotas are given out and also a rebate on the levies (Hesselmark, 2003; Pazos, 1998; Sumaila et al., 2004). Critics observe that the entire value chain from fisherman to retailer is now controlled by a handful of vertically-integrated companies which accrue most of the profits after the fish has left Namibia (including those resulting from increased retail prices due to decreases in supply associated with resource depletion) (Hesselmark, 2003). In Mozambique, analysts have also observed some perverse effects from joint ventures - notably that local producers may be bound to supply the mother-company of the foreign partner which can limit the host country's ability to choose its export market freely based on best offers (Tembe, 2003).

Objective 2: Resource sustainability and environmental protection

Efforts to sustain fisheries production whilst ensuring resource health and environmental protection can lead to tensions between producers, managers and environmentalists. Management efforts are often undermined by gaps in data and management co-operation among the range of relevant policy-makers.

Over the past several decades, the international community has devised a series of international, national and regional initiatives in an effort to improve the management of fisheries resources, the marine environment and the fishing industry. A range of environmental agreements focused on marine biodiversity and species conservation complement those specifically devoted to the sustainability of fish stocks (see Box 1.6).

More recently, there have been efforts to devise guidelines and principles related to the aquaculture sector.

This section begins with a discussion of the state of capture fisheries resources and associated difficulties with their management. It continues with a review of the range of environmental challenges related to aquaculture, marine biodiversity, ecosystem health and environmental protection in this sector.

Sustainability of capture fisheries

Fish are a renewable natural resource. Their capacity to regenerate, retain productivity and sustain long-term profitability depends,
\textit{Box 1.6: Summary of key international fisheries and environmental agreements}

\textbf{The 1946 International Whaling Convention:} This Convention established the International Whaling Commission (IWC), a system of international regulation for the whale fisheries to ensure proper and effective conservation and development of whale stocks.

\textbf{The 1971 Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat:} Signed in Ramsar, Iran, this treaty provides the framework for national action and international co-operation for the conservation and wise use of wetlands and their resources.

\textbf{The 1995 Jakarta Mandate of the Convention on Biological Diversity:} This Mandate sets out general guidelines for applying the Convention on Biological Diversity (CBD) to economic activities in marine and coastal areas such as mariculture and fisheries. While these guidelines are not binding, they offer common principles for the design of marine protected and conservation areas, for aspects of aquaculture and for the relationship of coast dwellers and resource users with concepts of biodiversity protection and use.

\textbf{The 1995 UN Agreement on the Conservation and Management of Straddling and Highly Migratory Stocks:} This 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 sub-regional or regional organisations or arrangements.

\textbf{The 1995 FAO Code of Conduct for Responsible Fisheries:} This Code establishes principles and standards for the elaboration and implementation of national policies for responsible conservation of fisheries resources and fisheries management and development.

\textbf{The 1999 FAO International Plan of Action (IPOA) on Management of Fishing Capacity:} The Code of Conduct for Responsible Fisheries provides that states should take measures to prevent or eliminate excess fishing capacity and should ensure that levels of fishing effort are commensurate with sustainable use of fishery resources. The IPOA is a voluntary FAO instrument that applies to all states and entities and to all fishers.

\textbf{The 1999 FAO International Plan of Actions on the Incidental Catch of Seabirds in Longline Fisheries:} The objective of this plan of action is to reduce the incidental catch of seabirds in longline fisheries where this occurs.

\textbf{The 1999 FAO International Plan of Action on Shark Fisheries:} The objective of this plan of action is to ensure the conservation and sustainable management of sharks.

\textbf{The 2001 FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU):} This plan of action is a voluntary instrument that applies to all states and entities and to all fishers. It sets objective principles and measures to prevent, deter and eliminate IUU fishing. These measures focus on all state responsibilities, flag state responsibilities, coastal state measures, port state measures, internationally agreed market-related measures, research and regional fisheries management organisations.
Box 1.7: What is a sustainable fishery?

A sustainable fishery is one where the fisheries management regime allows the resource (fish) to renew itself at a predetermined level. The term ‘sustainable’ is used in different ways by fisheries managers and there is considerable debate about the appropriate criteria for a ‘sustainable fishery’. Different fish have their own biological production function, and an understanding of their biological characteristics and interaction with other species and 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.

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 instance), the quality of data and methods used to determine maximum sustainable yield, and perhaps most importantly, the effectiveness of management regimes. The different fisheries management regimes in operation include:

‘Open access’ regimes: No control of the fishery, neither the quantity of fish caught nor fishing effort. Individual fishermen or fishing firms can enter or leave the industry as they desire without having to acquire a license (except as a pure formality) or pay an entry fee in any form. In terms of resource ownership, this type of situation is a ‘free-for-all’ or ‘common property’ situation with no individual ownership of the resource.

‘Catch control’ regimes: In this type of common property but controlled fishery, the harvest from the resource is capped either explicitly through controlling input (e.g. total allowable catch), or implicitly through inputs (e.g. licenses) or technical measures (e.g. gear restrictions).

‘Effective management’ regimes: From an economic perspective, an effectively managed fishery refers to a fishery where the amount of fishing effort and fish taken from each stock is set to optimise profits from that fishery. Under this type of fishery, which typically will involve some type of property rights to the fishery (e.g. community property rights, fisher organisation rights, individual property rights), production costs will be minimised within the constraints of the catch limit.

Sources: OECD (2003); Deere (2000)

however, on the sustainable use of a fishery and the health of the surrounding marine environment (see Box 1.7).

Overfishing presents serious challenges to the long-term sustainability of both the fisheries resources and the fishing industry. It is generally understood that overfishing affects nearly all of the world’s major fishing grounds, and that the resources available for exploiting fisheries far exceed the number of fish in the sea (FAO, 2004a; Pauly et al., 2002; Stone, 1997). In the 1950s and 1960s, for example, capture fisheries production increased six percent per year (tripling from 18 to 56 million tonnes). In the 1970s and 1980s, however, the average rate of increase declined to just two percent, and then fell to almost zero in the 1990s (WTO, 2000a).

From an economic perspective, production in the fisheries sector is also grossly inefficient. Operating costs for global fishing fleets far exceed revenues. The capacity of the global fishing fleet is at least 30 percent - some argue
as much as 200 percent – larger than needed for efficient harvesting (Gréboval, 2000; Porter, 1998a; Resources for the Future, 1996; Schorr, 2004; WWF, 1998). An increasing number of key fisheries operate at an economic loss, depend on government subsidies for their survival, or are closed to fishing. Subsidies to support the fisheries sector, conservatively estimated at between US$ 15 and US$ 20 billion dollars annually, greatly distort production and trade. Critically, they also negatively impact the sustainability of fish stocks (Milazzo, 1998) (see Chapter 6).

A recent assessment of fish stocks by the FAO indicates that only 20 percent of fish species is moderately exploited and only 3 percent is under-exploited (see Figure 1.7). Of the remaining 76 percent of the 441 species surveyed by FAO, 52 percent of stocks is fully exploited, 17 percent is over-exploited, 7 percent is depleted (FAO, 2004a). Among those that are fully or over-exploited are seven of the top ten fish species harvested (by quantity), including anchoveta, Chilean Jack mackerel, Alaska pollock, Japanese anchovy, blue whiting, capelin and Atlantic herring. Analysis of historical capture data reveals that the ecosystem destruction inflicted by overfishing occurs over a very short timeframe; in most cases, depletion of target populations occurs in less than 15 years (Myers and Worm, 2003).

While the term ‘fully exploited’ does not imply current over-exploitation, it indicates that catch levels have reached, or are very close to reaching their maximum sustainable level; as such, even increased effort would not generate higher yields. Stocks that are ‘fully exploited’ are in danger of slipping into the ‘over-exploited’ or ‘depleted’ categories with continued harvest rates. ‘Overfished’ stocks are those that would gain from a reduction in fishing effort and/or capacity and for which there is no room for further expansion (Garcia and de Leiva Moreno, 1999). ‘Depleted stocks’ are those in which harvest levels have decreased so much that total production is in decline.

Only the ability of fishing fleets to move on to lower valued species (such as anchoveta) when more profitable species’ populations have declined has prevented sharp declines in total global fish catches (McGinn, 1998; Pauly et al., 1998; Weber, 1994). Fish species that are particularly vulnerable to commercial over-exploitation include those that congregate to spawn (e.g. haddock, cod) and those that

Figure 1.7: Global trends in the state of world marine stocks: 1974-2003

Source: Emerson (2005)
migrate through many jurisdictions and are thus vulnerable in many locations (e.g. tuna, billfish) (Sen, 1994). According to recent work, the probability of a stock being depleted increases by 16 percent if shared by two countries, 67 percent if shared by five countries and 149 percent if shared by ten countries (McWhinnie, UBC Department of Economics PhD Candidate, personal communication). Since almost half of the total number of shared fish stocks worldwide are shared by more than five countries, over 50 percent of the shared stocks worldwide are therefore at a more than 50 percent risk of being over-exploited simply because they are shared (Sumaila, 2006). Crustaceans, such as wild shrimp, are also over-exploited in many parts of the world.

While depletion of fish stocks need not be irreversible, fisheries can be – and often are – mismanaged to the point that productivity is severely reduced or even lost completely (Porter, 1998b). The North Sea haddock population, for example, has not recovered from over-exploitation in the 1950s (Dunn, 2003). Neither have cod stocks off the Grand Banks of Newfoundland, where stocks are yet to recover despite the closure of the fishery in 1992 (Myers and Kent, 1998). Several commercially valuable marine species are now considered endangered or commercially extinct (e.g. bluefin tuna, some species of shark and exotic fish) (Rosser et al., 2001; TRAFFIC, 2002). On a more positive note, the case of the North Sea herring fishery highlights that fisheries can be managed in ways that help recover lost productivity. After the closure from 1977 to 1982 of the North Sea herring fishery due to overfishing, the stock was at the highest level recorded for 40 years by 2004 and is now certified as an environmentally responsible fishery by the Marine Stewardship Council (MSC) (Simmonds, 2001; UK National Statistics, 2006).

Many inland fishery resources - found in individual lakes, rice fields or rivers, or over vast areas such as transboundary watersheds - are similarly under threat from unsustainable fishing activities (Allan et al., 2005; FAO, 2004a). In 2002, inland fish stocks accounted for about 10 percent of global production. River fisheries, in particular, provide substantial catches in developing countries. The high cost of monitoring the exploitation and status of inland fish stocks means, however, that data are available on only a small fraction of inland fish species. Recent evidence suggests that over 50 percent of inland fish species occurs in rivers and that rivers contain a higher proportion of organisms classed as endangered or threatened than do most other ecosystems.

The problem of overfishing is also aggravated by wasted by-catch and discards. The lack of selectivity in many fisheries often leads to the unintended catch of non-targeted fish and other species (such as birds and dolphins). Non-target species of fish caught in nets or on longlines are often simply thrown back in the sea - representing a waste from both an environmental and economic perspective (Harrington et al., 2005). From a food security perspective, discarded by-catch also represents a waste of an important potential source of protein for consumption (Acheampong, 1997). Many efforts are underway to introduce more stringent regulations on by-catch and new technologies to reduce this waste.

The sustainability of fish stocks - both at sea and inland - is further threatened by a series of non-harvest related threats to marine ecosystems, including: alteration and degradation of habitat; land, air and water-based pollution; introduction of exotic (or alien) species, and global climate change (FAO, 2004a; Norse, 1993; Rieser, 1997) (environmental concerns are discussed in more detail below). The relative magnitude of these challenges varies by fishery. The impacts of declining fish stocks on local producers may sometimes be particularly great for inland fisheries - where producers are less able to move to alternate species or to move their fishing efforts to more productive waters. The status of some inland fishery resources has, however, been successfully enhanced through stocking projects (FAO, 2004a). In addition, compared to marine capture fisheries, inland fisheries can offer greater opportunities for habitat engineering and habitat improvement.
Challenges to managing capture fisheries

At the national, regional and international levels, a lack of co-ordinated action threatens the sustainability of the world’s fish stocks and the health of the marine environment (see Box 1.8). National perceptions of the severity and urgency of the fisheries crisis also affect the political commitment to conservation and management action. Even for those governments and industries motivated to manage their fisheries resources sustainably, the open-access nature of capture fishery resources makes management technically and politically difficult. The following is a summary of some key challenges to the management of fish stocks:

• **Lack of a single universal solution to fisheries management problems.** Many countries have failed to develop and maintain adequate systems for managing the fishing activities of the fleets - domestic or foreign - fishing in their EEZs. Fisheries management experts concur that the appropriate fisheries and capacity reduction policies vary over time and according to country, region, fishery, economic and environment conditions, and legal and social traditions (Lutchman and Hoggarth, 1999).

• **Disagreements regarding assessments of commercially important fish stocks and maximum sustainable yield.** Efforts to assess and manage fisheries are frustrated by scientific uncertainty concerning baselines, stock recovery rates and natural instability and fluctuations of some stocks and marine environments. Many countries lack adequate technical or financial capacity to carry out scientific research, stock assessments or economic analyses of management regimes.

• **Cost of monitoring and enforcing fisheries management regimes.** Many fisheries management agencies, particularly those in developing countries, lack the financial and technical resources necessary for effective monitoring and surveillance of management regimes, leading to weak enforcement of their policies.

• **Persistent illegal, unreported and unregulated (IUU) fishing activities.** Access of foreign fleets to fisheries resources within coastal waters remains inadequately regulated in most countries and many coastal states face persistent IUU fishing within their waters. IUU fishing is that which does not abide by management rules set by national or international authorities. It is not regulated and not appropriately reported fisheries information. A typical IUU activity is where a Flag of Convenience (FOC) operation moves vessel registration from a member country of an international fisheries management organisation to a non-member in order to avoid conservation management measures. In 2001, an International Plan of Action (IPOA) to Prevent, Deter and Eliminate IUU Fishing was adopted to help address the problem. The 2002 World Summit on Sustainable Development again highlighted the importance of addressing IUU fishing. A review of recent trends in the numbers of fishing vessels flying FOCs for the years before and after the adoption of the FAO IPOA-IUU found that the IPOA had secured a limited effect.

• **Pressure on governments from fishing communities and industry to maintain subsidies, access to fisheries and high fish catch quotas.** In many countries, the lack of economic alternatives in long-standing coastal fishing communities complicates efforts to implement changes in the fisheries sector. The slow growth of alternative employment options and the private debt of many fishing vessels can play a powerful role in driving overfishing and constraining the ability of fishers to exit a fishery. In many countries, fishworkers perceive no alternative but to pressure governments to maintain high catch quotas and access to fisheries. For similar reasons, many governments continue to subsidise their industries in ways that exacerbate overfishing.

• **Short-term gains from weak fisheries management.** For some countries, short-term economic and social objectives
outweigh stewardship of fish resources and marine biodiversity for longer-term economic rewards. Developed countries face continuing criticism for over-subsidising their fisheries sectors and not properly regulating the activities of their distant water fishing fleets. Governments of developing countries may allow foreign fishing and/or promote fisheries exports as a means to earn foreign exchange without adequate regard for the long-term implications for the industry.

- **Failure of states to ratify, implement and/or comply with international and regional agreements.** Many existing international environmental and fisheries agreements have yet to attract the necessary participation, co-operation and financial support of all relevant countries. States often fail to take the measures necessary to implement international agreements due to domestic political pressures. States are also often hesitant to limit their own fishing activities if they are uncertain that other countries will 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.

- **Difficulties in managing the high seas.** In 1985, UNCLOS called on states to take measures for their respective nationals and to co-operate with other states, as may be necessary for the conservation of living resources of the high seas. The management of high seas fisheries has, however, proven as difficult as the management of fisheries within EEZs (WWF, 1998). 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 (FAO, 1993). There are also significant problems of illegal, unregulated and unreported fishing on the high seas (HSTF, 2006; Upton, 2003). The result is that a number of highly migratory and straddling fish stocks are under pressure (Southampton Oceanography Centre and de Fontaubert, 2001).

Notably, some coastal states have taken positive measures to promote sustainable fisheries 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 community-based initiatives (WWF and IUCN, 1998).

To promote co-operation in the management of fisheries - within and between coastal states and on the high seas - states have also created a series of regional arrangements and agreements. In particular, regional fisheries management organisations (RFMOs) have become progressively more important in fisheries management - particularly due to the FAO’s Code of Conduct and Compliance Agreement, and the Straddling and Highly Migratory Stocks Agreement (both of which call on states to establish RFMOs and provide states with the possibility of taking action against non-parties to RFMOs) (see Chapter 8). Some governments have also created specific intergovernmental organisations to co-ordinate and represent their fishing interests.

**Aquaculture**

In recent years, the growth of aquaculture production has attracted attention as a way to reduce pressures on wild fish by providing an alternative source of supply. In both developed and developing countries, growth of aquaculture production has been seen as a strategy for creating local jobs in both small-scale and industrial production, whilst also creating spill-over opportunities for value-added industries (Asche and Khatun, 2006). A number of concerns, however, have been raised regarding the environmental impacts of aquaculture, from mangrove destruction to the use of pollutants and chemical inputs.

Rapidly growing aquaculture industries have confronted a series of management challenges due in part to inadequate regulatory frameworks and management capacity on the part of local and national governments (Delgado *et al.*, 2003). Aquaculture, in particular as a large-
Box 1.8: What drives overfishing? Debates about open access, technology and subsidies

Overfishing has been attributed to a number of factors, the relative importance and the interaction of which remain under debate. Some key factors include:

**Open access**

The challenges facing fisheries management present the classic characteristics of those associated with managing 'commons' - both at the global and local level. 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). In the fisheries sector, the lack of property rights to fish can give rise to a host of problems: overfishing; inefficient use of inputs; and low returns to fishing industries (Stewart, 2004). Even where management strategies do strive to limit access, the limits are often not tight enough or are poorly enforced. For most fishery 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.

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, since 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 for example more vessels, improved fishing technology, greater effort (e.g. hours at sea), or 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.

**Technology**

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).

**Subsidies**

Subsidies, in particular those that enhance the capacity of the fishing fleet, have been recognised as one of the key economic drivers of over-exploitation. In the absence of sufficient data, discussions, nonetheless, continue on the precise role of subsidies in depleting the world’s fish stocks, how they might be used to achieve environmental and socio-economic objectives, and options for mitigating possible negative effects (see Chapter 6 for a discussion of these issues).
scale, intensive production, can lead to water and soil pollution as effluent from aquaculture ponds and pens is released into the surrounding waterways.

The cultivation of carnivorous and omnivorous fish, including some of the high-value species such as salmon, tuna and shrimp, has also increased the demand for fishmeal and oil for use as feed in aquaculture, which is often derived from capture fisheries. To what extent growth in aquaculture production will increase fishing pressure will depend on whether there are suitable substitutes to fish meal (Asche and Khatun, 2006).

Additionally, shrimp farming in particular has led to the destruction of mangrove forests which play an important role in filtering nutrients, providing a breeding ground for many species and protecting the coast from floods and storms. Concerns have also been voiced that farmed fish might escape into the wild with consequent impacts on ecosystem dynamics (with special regard to transgenic fish).

**The marine environment**

Recognising the link between the health of ecosystems and fish stocks, more managers of capture fisheries are shifting their focus from fish stocks alone to a more integrated ecosystem management perspective - which includes efforts to monitor and manage the direct and indirect impacts of fishing on marine biodiversity and ecosystems (see, for example, Larkin, 1996; Sherman and Duda, 1999). Accompanying this development is a need for more information on the interactions among ecosystems and management systems.

Fishing can pose a series of additional threats to marine environments, ecosystems and biodiversity, including physical alteration and degradation of habitat, land and air-based pollution, changes in ecological interactions and the introduction of exotic species (Norse, 1993; Rieser, 1997). Heavy fishing can, for example, change the relative abundance of all species in the fish community. As overfishing pushes fishers to target species lower down the food chain, including undersized and younger fish, this can affect predator-prey relationships, the genetic diversity of fish stocks, and the future regenerative capacity of the fishery (FAO, 2004a; Hannesson, 2002; Pauly et al., 1998).

Certain fishing gear and practices (such as dredging, trawling, long-hauling, cyanide and explosives) can physically alter marine habitats, causing potentially devastating long-term changes in the ecosystems (FAO, 2004a; Rieser, 1997; Stump and Baker, 1996; Tudela, 2004). As noted above, some large-scale fishing techniques and equipment also have drastic impacts on the mortality rates of non-commercial, non-edible or non-target fish as well as on marine biodiversity (FAO, 2004a; Porter, 1998b; Stump and Baker, 1996). Overfishing and by-catch, for example, threaten the survival of endangered and protected species such as sea turtles, marine mammals such as dolphins, sea birds, 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 (Barber and Pratt, 1997; Graham, 2001; Johannes and Riepen, 1995).

Land-based activities can also impact the sustainability and productivity of fisheries. Coastal development, including urban and industrial expansion and aquaculture, poses threats to the health of marine ecosystems when it pollutes and degrades critical coastal habitats. Ultimately, such alterations can reduce fish stocks, alter species composition, health and diversity, increase ecosystem instability and reduce seafood quality and safety (Kimball, 2003).

Over the longer term, many fish stocks follow decadal fluctuations that seem to respond to natural climatic cycles. The effect of climate on fisheries is exacerbated in a situation of overfishing, when both fish stocks and fishing industries become more vulnerable to the natural dynamics of the environment. The assessment of these and other ecosystem-fisheries interactions is still in its infancy and much more needs to be known about their effects on fishery resources, fishing communities and industries, their causes and options for responding to them.
Objective 3: Social development, employment and food security

The fishing industry is a vital source of social and economic development, providing employment, livelihoods and food security in developed and developing countries alike. A core challenge for governments is to devise policies to maximise social and economic benefits for those linked to the industry, particularly in coastal areas, while balancing socio-economic gains with sustainability considerations in order to ensure the long-term viability of the resource base.

Employment and livelihoods

For both developing and developed countries, the productivity, sustainability and profitability of fish stocks is of critical importance to sustain the millions of families and communities who rely on the fisheries sector for their livelihoods.

The world’s fisheries sector provides employment to over 200 million people. Developing countries account for an estimated 98 percent of the 51 million people engaged directly in the global fishing industry and related processing activities (FAO, 2004a; World Bank, 2004). A further 150 million people in developing countries are estimated to work in sectors associated with the fishing industry, such as marketing, boat building, gear making and bait (ICLARM, 1999). Furthermore, the number of full-time fishers has increased at a rate of 2 percent per year since 1990 and is continuing to grow. In particular, aquaculture has become an important source of work, employing roughly 10 million people worldwide. While only partial statistics are currently available for the industry, numbers indicate that over the last decade, aquaculture employment has increased an average of 8 percent per year (FAO, 2004a).

Artisanal and small-scale fishers comprise nearly 90 percent of fishers worldwide and produce nearly 25 percent of the world’s catch (Schorr, 2005). That at least 6 million of the world’s fishers earn less than US$ 1 per day reinforces the critical link between fisheries and the survival of the world’s poorest people (World Bank, 2004). Small-scale fishers are particularly vulnerable to external shocks that impact their capacity to harvest and market fish.

Beyond direct employment, the socio-economic importance of the fishing industry to livelihoods is known to be significant but is difficult to quantify. For many coastal communities, fish resources represent the livelihood of the entire family. Women play a particularly prominent role in the fisheries sector - with many women (and family members) engaged in fishing and in some area of harvest, processing or marketing (Josupeit, 2004). In developed countries too, fisheries resources can be a critical source of income for coastal fishing communities whose communities and local traditions have relied for many decades, and sometimes centuries, on fishing and related processing activities (ANFACO, 2005; YUTAIKYO and ZENGYOREN, 2005).

When it comes to international fish trade, the implications for employment and livelihoods are complex. From an exporter’s perspective, increased trade in fish and fishery products facilitated through improved market access and strengthened supply-side capacity can provide important export revenue and employment opportunities. At the same time, greater trade orientation can result in less or lower quality fish for domestic consumption and in the longer term may negatively impact the sustainability of fisheries resources. From an importer’s perspective, fish and fishery products can provide an important source of protein as well as inputs into the domestic processing industry. At the same time, cheaper imports can threaten to displace less competitive local fishers and processors.

In any case, fishing communities in both developed and developing countries have a vested interest in the long-term sustainability and productivity of their fisheries as the basis for addressing food security and livelihoods objectives - particularly those with low incomes and/or limited possibilities to shift to other sectors or locations for work. Whether in
Food security

The FAO defines food security as the situation "when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 1996). The role of fish in nutrition shows marked continental, regional and national differences as well as income-related variations (see Figure 1.8). The importance of fish to food security is highest for artisanal and small-scale fishers in developing countries. For developing country populations, fish provides nearly 20 percent of animal protein (World Bank, 2004). In many coastal areas and especially among the poor, fish are the staple source of animal protein, particularly in developing countries.

The FAO warns that "unless the appropriate actions are taken very soon, the contribution of fisheries to food security - and to economic welfare in general - will decline" (FAO, 1995). The effects will be felt most severely in developing countries. A further decline in fish stocks, or a significant increase in the price of fish for consumption would seriously affect the nutritional status of many population groups, including some of the most vulnerable. Given food security concerns, there is increasing criticism of the inefficient conversion of high percentages of the global fish catch into oil and meal to feed livestock, poultry and farmed fish.

Human health

In the past decade, there have been growing concerns about the levels of chemicals in fish intended for human consumption and the potential impacts on human health. According to the FAO (2004a), several studies have concluded that levels of these chemicals in such...
Fish are low and probably below levels likely to affect human health. Nevertheless, the FAO advises that they can be of potential concern for populations for whom fish constitutes a major part of the diet as well as for pregnant and nursing women and young children who consume substantial quantities of oily fish.

The presence of chemical contaminants in seafood is highly dependent on geographic location, species, fish size, feeding patterns, solubility of chemicals and their persistence in the environment. To clarify the risks and concerns, focused risk assessments are needed. At present, there is little information about the effects of concerns about chemical levels on demand for fishery products. Comprehensive studies and clear information would improve opportunities for producers to respond to and manage concerns – particularly as consumer awareness of these issues rises.

Several organic and inorganic compounds can find their way into fish and seafood. These compounds can be divided into three major groups:

- **Inorganic chemicals**: arsenic, cadmium, lead, mercury, selenium, copper, zinc and iron.
- **Organic compounds**: polychlorinated biphenyls (PCBs), dioxins and insecticides (chlorinated hydrocarbons). These chemicals are able to accumulate and persist in the environment.
- **Processing-related compounds**: sulphites (used in shrimp processing), polyphosphates, nitrosamines and residues of drugs used in aquaculture (e.g. antibiotics or hormones).

Many of the inorganic chemicals are essential for life at low concentration but become toxic at high concentration. Several studies indicate that fish in the open seas (which are still almost unaffected by pollution) mostly carry only the natural levels of inorganic chemicals (FAO, 2004a). However, these elements can be found at concentrations that exceed the natural load in heavily polluted areas, in waters that have insufficient exchange with the world’s oceans (e.g. the Baltic Sea and the Mediterranean Sea), in estuaries, in rivers and especially in locations that are close to industrial sites.

Organic compounds, on the other hand, are mostly of human origin and are brought to the aquatic environment by humans. Increasing amounts of chemicals may also be found in predatory species as a result of **biomagnification**, which is the concentration of the chemicals in higher levels of the food chain. Similarly, they may be present as a result of **bioaccumulation**, which is the accumulation of chemicals in the body tissues over the lifespan of the individual fish.

**Work safety**

While fisheries are an important source of employment, work in the industry is often accompanied by considerable risks. The FAO observes that fishing is considered one of the most dangerous occupations (FAO, 2004a). A particular set of safety concerns for crews arises in relation to ageing fishing fleets. Older vessels often do not comply with the minimum standards for accommodation and safety that are applied to newly-built vessels. Several labour unions with members in fisheries and related processing sectors have also raised concerns about extremely poor labour standards and low wages for work on fishing vessels and in processing facilities (ICSF, 1997). For vessels at sea for many weeks or months, the working conditions and safety of crew may be compromised in favour of keeping costs low.

Importantly, the International Labour Organization (ILO) is currently establishing a new Convention on labour conditions in the fishing industry (which includes accommodation standards for new fishing fleets). The FAO, the ILO and the International Maritime Organization (IMO) are also together finalising major revisions of the Code of Safety for Fishermen and Fishing Vessels and the Voluntary Guidelines for the Design, Construction and Equipment of Small Fishing Vessels.
**Political volatility and tensions in fisheries**

A growing source of tension in the fisheries sector is the relationship between artisanal and industrial fishers. Increasingly, artisanal fishers protest the presence of foreign, often heavily-subsidised industrial fishing fleets in coastal waters, uniting through social movements to protest irresponsible harvesting techniques and the related impacts on artisanal fishing communities and traditional livelihoods (ICSF, 1994; ICSF, 1997). In the face of fierce competition, many of these communities fight to maintain local skills and knowledge of local ecosystems, often arguing that their fishing methods are more efficient and sustainable. While some artisanal and small-scale fishers are integrated into international supply chains, many artisanal communities struggle to maintain local marketing channels as a way to meet local food needs and improve food security (Kurien, 1998; SeaFish for Justice, 2005). Artisanal fishers have also raised a series of concerns about the effects of aquaculture on coastal environments, fish stocks and local fish markets.

In developed countries, too, many fishing communities struggle to protect their livelihoods. In the face of both domestic and local competition, fishers use strikes and political power to influence political processes. In late 2004, for example, Spanish fishers wary of the potential for declining government support to their industry held a strike that halted traffic and business for a number of days (BBC, 2005). Similarly, in several developed countries, there are also small-scale and owner-operated fishers with long-standing community and family traditions in the fishing industry that face the threat of being pushed out of the industry by larger and more powerful companies.

Debates about use of, and access to, diminishing fish stocks have also culminated in legal challenges, diplomatic tensions and even the use of force among states. 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 (see, for example, Farnsworth, 2005). More recently, there have been conflicts over tuna in the north-eastern Atlantic, crab and salmon in the North Pacific, and squid in the south-western Atlantic. Particular political problems have arisen regarding straddling and highly migratory stocks, as was the case in a 1995 dispute between Canada and Spain over turbot. From 2000 to 2001, Chile and the European Union were also engaged in a trade dispute over swordfish (see Box 1.9).

**Box 1.9: The EU-Chile dispute over swordfish**

In 2000, a dispute arose between Chile and the EU regarding trade in swordfish. Concerned that the Spanish fishing fleets were undermining Chilean conservation efforts related to swordfish, Chile prohibited EU vessels in the South-East Pacific from landing swordfish for warehousing, transshipping onto other vessels in Chilean ports or direct importation. In response, the Spanish Association for High Seas Fisheries accused Chile of implementing a false conservation measure. To resolve the issue, Chile initiated proceedings at the International Tribunal for the Law of the Sea while the EU turned to the WTO Dispute Settlement Body (DSB). In its complaint to the WTO, the EU claimed that the Chilean measures were in breach of GATT Article V which ensures freedom of transit through the territories of WTO Members and GATT Article XI which eliminates quantitative restrictions (EC, 2000). The EU contended that the Chilean measures decreased EU competitiveness and consequently damaged the European industry. Further, the EU argued that the restrictions prevented its companies from exporting swordfish directly from Chilean ports to non-EU markets. Following consultations between the EU and Chile, the Dispute Settlement Body established a panel in 2000 in response to a request from the EC. Ultimately, however, the EU and Chile agreed to suspend the process for the constitution of the panel in late 2003.5
PART TWO

Overview

Across the globe, governments share strong common interests in maintaining the sustainability and productivity of the world’s fisheries - whether to generate foreign exchange, stimulate regional, rural or coastal development, or provide employment. Most of the world’s governments are also signatories to a range of international fisheries and environmental agreements that call on them to ensure the conservation and sustainable use of fisheries resources and marine biodiversity and the protection of the surrounding coastal environment.

Part Two of the paper explores seven areas of policy debate that highlight the intersection of fisheries, trade and sustainable development:

- Chapter 2 Tariff Structures
- Chapter 3 Anti-Dumping and Countervailing Measures
- Chapter 4 Standards and other Non-Tariff Measures
- Chapter 5 Ecolabelling
- Chapter 6 Subsidies
- Chapter 7 Access Agreements
- Chapter 8 Trade-related Environmental and Fisheries Management Measures

In discussing trade-related issues, the chapters focus primarily on the World Trade Organization, though reference is made to regional and bilateral arrangements where particularly relevant. Drawing on the discussions in each of these chapters, Chapter 9 includes a summary of the linkages between these trade-related issues and the achievement of public policy objectives. Chapter 9 also presents recommendations for priority issues for further research on international fisheries trade and its contribution to sustainable development.

The objective of each chapter is not to offer a comprehensive assessment, view or verdict on the particular policy issue(s) at stake. This would require rigorous understanding of regional and national political economy considerations as well as lengthy economic, social and environmental analysis that is beyond the scope of this discussion paper. Rather, the objective here is to lay the groundwork for future policy discussions and research by:

- Providing background on key issues;
- Setting out the range of tensions, challenges and opportunities among policy objectives; and
- Reviewing the relevant international processes where discussions take place.
2 TARIFF STRUCTURES

2.1 The policy issue

International trade policy has significant bearing on patterns of fish trade (Delgado et al., 2003). The WTO, regional and bilateral trade agreements all play a significant role in removing and easing traditional trade barriers such as tariffs and quantitative restrictions to fish trade. Despite the significant reductions in tariffs by both developing and developed countries, selective tariff use (including tariff peaks and tariff escalation), countervailing duties (see Chapter 3), and technical, food safety and environmental standards (see Chapter 4) continue to limit access of fish in international markets. This chapter focuses specifically on tariff structures.

Many fish-exporting nations would like to pursue further tariff liberalisation in the fisheries sector and are pushing for new commitments in the current Doha Round of multilateral trade negotiations. There are, however, a range of disagreements on approaches and modalities towards achieving liberalisation and on the effects of liberalisation that are likely to vary depending on domestic fisheries management policies, the method of production (i.e. capture or aquaculture), and country-specific social, cultural, economic, and political factors (Ahmed, 2006; Roheim and Sutinen, 2006; Greenhalgh 2004). Liberalisation is likely to have both positive and negative effects on the range of public policy objectives - from export growth to environmental sustainability and employment (OECD, 2003). Some countries, including the US and New Zealand, argue that the liberalisation of fish trade will contribute to economic development in developing countries (ICTSD, 2005b). In contrast, Japan has argued that the WTO should allow Members to retain the flexibility to set tariffs based on their fisheries management schemes. For its part, Korea has warned that tariff elimination would provide an incentive for increased fishing efforts, which would likely lead to overfishing in exporting countries without proper management schemes.

2.2 Background and relevant facts

The current Doha Round of WTO negotiations launched in 2001 addresses liberalisation in the fisheries sector as part of the Non-Agricultural Market Access (NAMA) negotiations. Issues related to tariff rates for fish and fishery products are also addressed in many regional economic arrangements. In addition, the major fish-importing countries - Japan, the EU and the US - have implemented a series of policies and agreements that offer preferential access for developing country fishery products.

Multilateral trade arrangements

With the entry of China into the WTO in 2001, all major fishing countries, with the exception of Vietnam and Russia (both of which are in the accession process) have joined the international trade body. In the area of tariffs, WTO Members have engaged in a series of Rounds to lower and eliminate tariffs on imports and transform quotas and non-tariff barriers into their tariff equivalent (because tariffs tend to cause fewer distortions than quotas and are easier to negotiate down). Once agreed, tariff levels are 'bound' - a country cannot raise the tariff level on a particular product without new negotiations.

At the time of publication, WTO Members were continuing to debate the appropriate approach to liberalisation in the fisheries sector (see below).

Fisheries tariff rates at the WTO

Fisheries tariffs have been historically low, compared to agricultural goods such as meat (which may incur tariffs of as high as 70-80 percent) (FAO, 2004d). Nonetheless, the 1986-1994 Uruguay Round of the General Agreement on Tariffs and Trade (GATT) talks resulted in
significant reductions in tariffs in the fisheries sector with an overall reduction of 26 percent in tariffs on fisheries imports from all sources. Average most-favoured-nation (MFN) tariffs (i.e. tariffs that apply to all countries) are currently set at 4.1 percent for Japan, 10.7 percent for the European Union and 0.9 percent for the US (FAO, 1995). The number of bound tariffs for developing country imports, or ceilings on customs tariff rates, was also increased from 21 percent to 73 percent (see Table 2.1). In many instances, however, tariffs were bound at a level above the current rate (providing some allowance for future increases) (WTO, 2005a). Provisions for duty-free imports from developing countries increased marginally from 19 to 20 percent (FAO, 1995). Developing countries and economies in transition decreased their average MFN tariff from 35.2 to 8.1 percent (a 76.9 percent cut). Box 2.1 outlines some of the drawbacks in the current tariff classification system.

**Box 2.1: Tariff classifications**

Most countries in the world classify the products they export and import according to the Harmonised Commodity Description and Coding System (HS) administered by the World Customs Organization (WCO). The HS comprises about 5,000 commodity groups, each identified by a six-digit code, arranged in a legal structure and supported by uniform classification rules. The system is used by more than 177 countries and economies as a basis for their customs tariffs and for the collection of international trade statistics. Over 98 percent of the merchandise in international trade is classified in terms of the HS.

The HS allows distinctions between different products (e.g. salmon and hake), thus enabling different tariff levels to be applied to each identified product (or product line). The classification for fish and fishery products within this system was established three decades ago and reflects the structure of trade and the species traded at that time.

Since then fisheries trade has seen increased participation of developing countries while the range of fish species entering trade today has expanded. Despite this expansion in trade, there is no requirement that new species entering international trade be classified separately. In practice, this can lead to discriminatory tariff treatment between species.

The classification system allows newly-traded fish species to be classified as “not elsewhere specified” if they do not fit taxonomically into one of the existing HS species categories. It also allows countries to create a separate HS classification line for specific species if they so wish. Many countries have created new HS classification for fishery products such as the Patagonian and Antarctic toothfish in international trade.

This special classification category can mean that particular species may receive a different tariff treatment than an identified substitutable product, creating loopholes for discrimination. During the Uruguay Round, for example, the EU offered to reduce tariffs to 7.5 percent for a limited number of separately categorised species in frozen whole, headed and gutted or fillets of fishery product forms. Yet, the EU would not offer to change the pre-Uruguay Round 15 percent tariff rate applying to those product forms for fish falling into the “not elsewhere specified” category, which may be of high value or importance to developing countries.

Source: Dommen (2000)
Table 2.1: Percentages of tariffs bound before and after the Uruguay Round talks

<table>
<thead>
<tr>
<th>Country Category</th>
<th>Before (%)</th>
<th>After (%)</th>
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<tbody>
<tr>
<td>Developed countries</td>
<td>78</td>
<td>99</td>
</tr>
<tr>
<td>Developing countries</td>
<td>21</td>
<td>73</td>
</tr>
<tr>
<td>Transition economies</td>
<td>73</td>
<td>98</td>
</tr>
</tbody>
</table>

Source: WTO (2005b)

Note: Values reflect tariff lines. Therefore, percentages are not weighted according to trade volume or value.

Tariff structures in developed countries

The profiles of tariff structures vary widely among developed countries as does the complexity of their tariff systems. Since developed countries are major markets for developing country fisheries exports, their tariff profiles have a significant impact on economic opportunities for developing country producers and exporters. In most developed countries, the Uruguay Round left in place tariffs which vary significantly depending on the type of product. Looking across OECD nations as a whole, about 68 percent of OECD fish imports are subject to tariffs ranging from zero to five percent. Only three percent of imports are subject to tariff peaks greater than 15 percent. Tariff peaks are usually defined as those at 15 percent and above, or more generally to describe the existence of relatively high tariffs, usually on ‘sensitive’ products, amidst generally low tariff levels.

Since the end of the Uruguay Round, the key fish importers have maintained higher tariff rates for most value-added processed fishery products from developing countries (FAO, 1998a; 1998b) (see Table 2.3). For developing countries, such ‘tariff escalation’ (i.e. where tariffs are higher on processed and semi-processed products than on unprocessed ones) is particularly worrisome as it can limit exports of processed and value-added commodities to developed countries (Sen, 1994) (see Table 2.2).

Overall, the EU and Korea apply the highest duties and have the highest occurrence of tariff peaks, with 41 percent and 69 percent respectively of their tariffs set at rates higher than 15 percent. In total, the EU applies tariffs peaks to around 5 percent of developing country exports (Roheim, 2004). That said, the EU also provides duty-free access for raw seafood products from many developing countries through preferential trading arrangements. Tuna - a commercially-valuable export for many developing countries - provides a good example of the application of differential import tariffs. In the EU, tariffs on processed forms of tuna (e.g. tuna loins and canned tuna) are higher than tariffs for frozen whole tuna. In addition, to protect the EU tuna canning industry, the EU also maintains a separate quota of 4,000 tonnes for imports of tuna loins (FAO, 2004d).

Finally, the effective rate of protection for some developed country exports can be far higher than the nominal tariff indicates. For commodities

Table 2.2: Average tariff rates (%), by type of seafood (developed countries)

<table>
<thead>
<tr>
<th>Type of seafood</th>
<th>EU</th>
<th>Japan</th>
<th>US</th>
<th>Korea</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw fish</td>
<td>10.3</td>
<td>4.3</td>
<td>0.6</td>
<td>15.3</td>
<td>0.6</td>
</tr>
<tr>
<td>Intermediate seafood</td>
<td>4.0</td>
<td>2.0</td>
<td>1.0</td>
<td>33.0</td>
<td>3.0</td>
</tr>
<tr>
<td>products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processed seafood</td>
<td>16.3</td>
<td>9.0</td>
<td>3.3</td>
<td>20.0</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Source: Adapted from Roheim (2004).
that have freely-traded intermediate inputs or that are sold in their original form (e.g. live fish that are sold with no further processing or packaging), the nominal rate of protection may be a solid indicator. However, many final fishery products (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 measures the positive or negative valued-added in the production of a commodity. If, for example, 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 fishery products are higher than tariffs on raw fishery products). 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 as high as 43 to 52 percent (Sen, 1994).

### Tariff structures in developing countries

Developing country tariffs on fish and fishery products are higher than developed country tariffs (largely due to ad valorem duties which are calculated based on the value of the product). Average tariffs for developing countries are 19.4 percent for raw foods, 22 percent for intermediate products, and 23.8 percent for processed food (see Table 2.4). Tariff structures vary significantly, however, between developing countries. Malaysia and India, for instance, apply their highest level of duties to intermediate products. Thailand has the highest consistent tariff rates at 60 percent, followed by India, while Chile and Malaysia apply the lowest duty rates. Countries such as India, Thailand, Chile and Kenya have identical tariffs for all kinds of raw products. Other countries differentiate between raw products and have more heterogeneous tariff systems overall. Malaysia, for example, applies tariffs from 0-18 percent, Mexico from 8–30 percent and India from 15-45 percent.

### Regional, bilateral and preferential economic arrangements

Regional economic organisations and regional trade agreements have proliferated in the past several decades and play a key role in the management and expansion of trade liberalisation. As of September 2006, the WTO Secretariat had been notified of a total of 211 free trade agreements, 161 of which were notified after the creation of the WTO in January 1995 (WTO, 2006a). At that time, only one WTO Member, Mongolia, was not party to a regional trade agreement. Importantly, commitments made through regional trade agreements often go beyond those at the WTO. For example, the WTO Secretariat estimates that 55 percent of global trade is conducted on a duty-free basis, but only

### Table 2.3: Examples of EU tariff escalation and tariff peaks

<table>
<thead>
<tr>
<th>Type of fish</th>
<th>Description</th>
<th>EU tariff (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cod</td>
<td>Fresh and frozen</td>
<td>15</td>
</tr>
<tr>
<td>Cod fillets</td>
<td>Fresh and frozen</td>
<td>18</td>
</tr>
<tr>
<td>Cod fillets</td>
<td>Dried, salted</td>
<td>20</td>
</tr>
<tr>
<td>Cod</td>
<td>Dried, salted</td>
<td>13</td>
</tr>
<tr>
<td>Cod fillets</td>
<td>Battered</td>
<td>25</td>
</tr>
<tr>
<td>Tuna</td>
<td>Frozen whole*</td>
<td>18</td>
</tr>
<tr>
<td>Tuna</td>
<td>Tuna loins and canned</td>
<td>24</td>
</tr>
</tbody>
</table>

Source: Ahmed (2006)

* This tariff has been suspended for many years.
6 percent of trade is duty-free bound within the WTO, indicating that a significant portion of trade is governed by regional arrangements (Bacchetta and Bora, 2003).

Many regional economic arrangements - including the Caribbean Community and Common Market (CARICOM), the Common Market for Eastern and Southern Africa (COMESA), the Forum Fisheries Agency (FFA), Asia Pacific Economic Co-operation (APEC) and the North American Free Trade Agreement (NAFTA) - have specific provisions and regulations related to fisheries management and development (FAO, 1998a). NAFTA, for example, has a framework for tariff removal for selected fish (such as tuna) and for processed fishery products. APEC members have a Fisheries Working Group (FWG) which promotes sector-specific work relating to trade and investment liberalisation and facilitation (Dommen, 2000). The European Union also has its own regional Common Fisheries Policy (CFP) which governs access agreements, marketing policy (regarding quality, packaging and labelling), and trade relations in addition to fishing activities, aquaculture and the processing of fishery products carried out in member states’ territories in EU fishing waters by EU vessels. CARICOM has a collective policy to “promote the development of the fisheries sub-sector in member states with a view to optimal exploitation of their resources on a sustainable basis”, in part through the implementation of a common CARICOM Fisheries Policy and a CARICOM Regional Fisheries Mechanism. In Africa, COMESA has set forth a series of objectives for the fisheries sector, including the exploitation of EEZs, surveillance of EEZs with regard to marine fisheries development and the marketing and stabilisation of agricultural commodity prices. Finally, in 1997, the South Pacific Forum set up the FFA which aims to secure the maximum benefits from the region’s living marine resources for Pacific Islanders and to promote co-operation and mutual assistance amongst its members on fisheries policy.

Finally, a range of other conventions and special agreements of bilateral and multilateral co-operation exists, including both free trade agreements between developed nations such as Australian seafood exports to the US and between developed and developing countries such Mexican tuna exports to Japan. Many developed and developing countries are also negotiating bilateral agreements involving tariff exemptions for participating countries (particularly through preferential agreements) (see Box 2.2). In addition, a series of fisheries access agreements has been forged – through which one country agrees to provide another with a given level of access to its fisheries resources in exchange for financial or other forms of compensation. The EU, for example, has a series of fisheries access agreements with African, Pacific Island and Caribbean countries as well as with Latvia, Poland, Russia, and Argentina (see Chapter 7).
2.3 Policy debates, tensions and challenges

This section reviews key arguments about the relationship between liberalisation and trade, environment and social development objectives. At the outset, it is important to note that evidence on the impacts of changes in tariff structures remains inconclusive. Economists, for example, have difficulty isolating the impacts of tariff liberalisation from political, environmental and economic 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 factors (such as financial crises and the El Niño effect) could outweigh or balance increases in incentives for production or consumption of particular products due to lower tariffs. The effort to gather empirical evidence is further frustrated by limited data on fish stock health.

**The Doha Round negotiations and liberalisation of trade in fish and fishery products**

At the WTO, tariffs for fish and fishery products are discussed as part of the broader negotiations on NAMA and resulting disciplines under this negotiating item will equally affect the fisheries sector. The current negotiations aim to reduce, or as appropriate eliminate tariffs, including the reduction or elimination of tariff peaks, high tariffs, and tariff escalation, as well as non-tariff barriers, in particular on products of export interest to developing countries for all non-agricultural products (para. 16, Doha Declaration; WTO, 2001). Reductions will be based on certain 'modalities' to be agreed, which could include a mathematical formula to cut tariffs across the board, or tariff reductions by products or sectors.

Several Member states have proposed the inclusion of ‘fish and fish products’ as a sector for accelerated liberalisation. Some countries favour a sector-specific agreement that would liberalise fish trade separately from the general agreement on market access for non-agricultural goods. The United States, Canada, Iceland, New Zealand, Norway, Singapore and Thailand, for example, have each proposed to eliminate or substantially reduce tariffs and address unjustified non-tariff barriers within the fish sector. The US would like to see all tariffs in this sector eliminated as soon as possible (latest by 2010) while Canada supports proposals to include fishery products under new ‘zero-for-zero’ (duty-free) sectoral agreements (Canada, 2002; Canada et al., 2005; US, 2002). Mauritius, however, has raised concerns that across-the-board tariff reductions would lead to the erosion of preferences currently enjoyed by a number of poor countries, given that the sectors proposed

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**Box 2.2: Preferential trade arrangements**

Several developed countries have schemes that offer preferential rates and duty-free access for the exports of selected developing countries, as well as the removal of tariffs for certain types of products such as fresh, chilled and frozen fish.

The Generalised System of Preferences (GSP) provides the framework for most preferential trade arrangements. Introduced at the 1968 UN Conference on Trade and Development (UNCTAD II), the GSP gives selected developing country exports access to developed country markets at lower or zero tariff rates - with the aim of increasing developing countries’ competitiveness. The primary focus of GSP policies tends to be on industrial products but many fish exports from developing countries are also covered. While the relative importance of GSP policies to many developing country exports has declined in recent years (due to multilateral trade negotiations, unilateral actions and changes in productivity), it remains an important contributor to trade opportunities.
for accelerated liberalisation, such as fish and fishery products, are exactly those that are of specific interest to the preference beneficiary countries (Mauritius, 2003). India and Singapore have also called for tariff peaks and tariff escalation to be addressed in the negotiations (India, 2002; Singapore, 2002). The EU, for its part, has stated that the key priority in NAMA should be reaching a general formula for tariff cuts on all non-agricultural goods and thus is reluctant to move on sectoral liberalisation of fishery products.

Japan has long resisted reductions in tariffs for fish and fishery products. Japan rejects the zero-for-zero approach, rather advocating that countries should be given the flexibility to determine tariff levels based on the level of fishery resources and the status of fishery management (Japan, 2003). Japan has also called for tariff cuts on fishery products to be lower than those for other NAMA products. Similarly, South Korea and Chinese Taipei are firmly opposed to liberalising trade in fishery products on a sectoral basis (Chinese Taipei, 2003; Korea, 2003). Korea has argued that tariff elimination would provide an incentive for increased fishing efforts, which would likely lead to over-fishing in exporting countries without proper management schemes. Even in the importing countries, fishing efforts would likely increase to compensate for income losses resulting from cheaper imports. While supporting Korea’s view, Chinese Taipei added that increases in aquaculture production were unlikely to address these concerns given that the main ingredient in fish feed was produced from wild-caught fish.

**Relevant international processes**

The WTO is the key international forum for discussion of tariff liberalisation in the fisheries sector. In the Doha negotiations, a proposal to eliminate all import duties on fish and fishery products was tabled in 2003. There is currently no consensus regarding these proposals, although it is likely that import tariffs on fish and fishery products will be substantially reduced from present levels. As a consequence, countries that benefit from duty concessions and preferences will see their gains eroded. It is also probable that developing countries will be given longer implementation periods for reducing their import tariffs and some exceptions may be allowed for highly vulnerable countries (Lem, 2004).

As noted above, tariff liberalisation is also managed and under discussion in a series of regional and bilateral processes – including APEC, the EU, and CARICOM.

**Policy objective: Profitability and export revenue**

Tariffs are an important source of revenue for many developed and developing countries, however, they also have the potential to impede export growth and create market inefficiencies.

Developing countries have consistently argued that the structure of international trade is biased against them and called for further liberalisation by developed countries. Despite the liberalisation efforts of the Uruguay Round, some important fishery products remain subject to high tariffs - particularly for processed fishery products (tariff escalation). Combined with domestic factors, developed country tariff structures play a significant role in locking developing countries into the export of low value-added, raw fishery products. In particular, tariff escalation and related import duties can constrain developing countries from diversifying their exports towards value-added and more profitable products (FAO, 2004d). For many developing countries, further tariff liberalisation that reduces tariff peaks and tariff escalation would offer possibilities to increase market access for processed fishery products, diversify production activities and move into value-added activities. In so doing, it could generate greater economic returns, incomes and employment opportunities. The risk, however, is that non-tariff measures such as health and environmental regulations in importing countries may offset increases in market access through tariff reductions.
Despite these benefits, tariff liberalisation can still pose challenges for developing countries. When general tariff reductions are granted by key importers to all trading partners, some developing countries have expressed concern that the competitive benefits they gain from preferential trading arrangements may be offset or lost (this challenge is often referred to as ‘preference erosion’). Namibia, for instance, currently imports shrimp into the EU market at zero tariff, given its status as a least-developed country (LDC), while Thailand’s exports are faced with 14.4 and 20 percent tariffs for raw and cooked shrimp respectively. A general reduction in tariffs would lessen the market access advantage of Namibian exporters over their competitors. While sugar and bananas are usually the most sensitive exports for many developing countries, some will also be affected in the fisheries sector, such as Namibia, Mauritius, Madagascar and in particular the Seychelles, which is expected to be hardest hit in this sector (Alexandraki and Lankes, 2004; Low et al., 2005).

Furthermore, for many developing countries, the reduction or elimination of their own tariffs on fishery products may have substantial impacts on government revenues (Bostock, 2004). Many developing country governments rely on tariff revenues as a significant portion of their revenues - particularly for poorer states with low income and weak tax systems (Ahmed, 2006). From 1999 to 2001, for example, import duties represented 15 percent of government revenues in developing countries and 34 percent of revenues for least-developed countries in Africa (Ahmed, 2006).

Policy objective: Resource sustainability and environmental protection

The relationship between trade liberalisation and the sustainability of capture fisheries and aquaculture production is not well understood (OECD, 2003). Given that tariff levels vary between countries and products, the environmental effects of liberalisation will likely vary depending on what products are subject to liberalisation and in what countries. While there are some country studies that consider economic impacts of tariff liberalisation on the fisheries sector, only a handful of studies examine the impacts of trade factors on fish stocks, aquaculture and the marine environment. Until such assessment is undertaken, many environmental analysts caution against liberalisation of tariffs on unprocessed goods in the fisheries sector. Several governments and many non-governmental organisations (NGOs) argue for an environmental assessment of previous and/or future trade liberalisation efforts (United States of America, 1999; WWF, 1999).

In 2003, an OECD study argued that the extent to which trade liberalisation generates environmental concerns would vary significantly depending on whether the focus is shared stocks, high seas fisheries not subject to management, fisheries under bilateral access agreements, underexploited fisheries, multi-species fisheries or aquaculture production. For these cases, the study advises policymakers to pay particular attention as "market liberalisation is most likely to elicit a supply response and hence complementary targeted sector policies should be in place if welfare gains are to be optimised" (OECD, 2003).

In an ideal world, fisheries production - both capture and aquaculture - would be subject to effective management regimes to ensure production is kept at a level consistent with sustainability objectives. In such a world, the economic incentives and pressures that trade liberalisation can stimulate would be managed so as to prevent over-exploitation, destructive fishing and over-intensive aquaculture. Given that management regimes often fail to adequately control fishing effort or encourage the internalisation of costs, tariff liberalisation may fuel unsustainable 'scale effects’ - increasing fish harvesting, exacerbating the over-exploitation of fish stocks, increasing investment in harvesting capacity, and driving practices which are ecologically detrimental (Sen, 1994).
Where tariffs for a particular product are currently relatively low (e.g. one or two percent), the impact of future liberalisation on the trade and production of that fishery product may not be significant. On the other hand, if a country were to significantly reduce high tariff rates of 20 or 30 percent on many fishery products, production in these sectors would be likely to increase, reflecting new export opportunities (e.g. trade creation). Fast growth in these areas could have damaging environmental impacts, particularly if tariff reductions are applied to species or aquaculture operations that are badly managed.

Tariff reductions could also lower prices for consumers, increase demand for fishery products and, motivate greater fishing effort as fishers try to maintain revenues by increasing the volume of fish sold. In addition, where liberalisation expands trade opportunities and potential returns to fishers for a particular fishery product (e.g. where foreign consumers are willing to pay higher prices for certain quality fishery products), fishers may be inclined to increase efforts to make even higher profits. In the long-run it is possible that the overall production of fishery products may actually decrease over time, because stocks would become over-exploited and yield lower catches. For example, rising trade is cited as a major cause for the expansion of live reef food fish (LRFF) fisheries in the Indo-Pacific region. As a result, groupers, which are the most desired fish species in the LRFF trade, are heavily fished and traded (Sadovy et al., 2003).

On the other hand, there are potential synergies between tariff liberalisation and environmental protection. Where export opportunities increase national income, revenue could be channelled towards the improved management of fisheries and marine biodiversity. The availability of cheaper imports may also reduce pressure on the domestic fisheries resources in the importing country and allow fish stocks to recover, assuming that fleet capacities and fishers can easily shift to other occupations (OECD, 2003). Moreover, tariff escalation can perpetuate the over-use of fisheries resources by some countries; in order to maximise their fish exports and their foreign exchange receipts they may export a greater quantity of unprocessed products to achieve a similar level of earnings that processed or value-added products would provide (WTO, 1997).

Additionally, if processed goods from developing countries had greater market access, some effort might be diverted from fishing towards value-added industries, relieving pressure on the marine environment. It is possible, however, that if a country had access to sufficient financial resources, it could increase both fish harvesting and processing activities.

**Policy objective: Social development, employment and food security**

The impacts of tariff liberalisation in the fisheries sector on social development, livelihoods, income and poverty alleviation are hotly contested (Ahmed, 2006; Kurien, 2004).

On the positive side, liberalisation could raise producer prices - benefiting poor fishers. Increased demand and access to new markets that emerge from liberalisation could bring new opportunities to small-scale fisheries and workers in processing industries. Where tariff escalation restricts the opportunities for developing countries to diversify production, liberalisation could aid efforts to diversify employment opportunities within national economies (Bulte and Barbier, 2005). In addition, increased trade as a result of further tariff reductions could lower consumer prices of fishery products and increase the variety of fishery products available for processing and sale.

On the other hand, tariff liberalisation may also produce social costs, including threats to food security, threats to fish stocks in fisheries important to local livelihoods and, in some cases, pressures on local cultures and traditions. From a food security perspective, poor consumers may be negatively impacted, as fishery products may be diverted into more lucrative export markets instead of being
available for local consumption. As fishers devote effort to producing fish for higher prices in export markets, liberalisation may increase the cost of fish in local markets and/or reduce the variety of fish available - leaving local communities with only lower-value fish to consume. As commercial operators take over fishing and aquaculture activities, more fish may be consumed by wealthier consumers, and the share of fish protein available to artisanal fishers could also decline. A study on Senegal, for example, found that the switch of the local Senegalese fishing effort to export species had a serious impact on local food supplies (and on key stocks) (UNEP, 2001).

An expansion of trade in aquaculture-based fishery products also generates some socio-economic concerns. At present, most production in developing countries is subsistence farming for local consumption (OECD, 2003). However, for some products, production is almost entirely export-oriented and the export orientation of production in many developing countries is growing (OECD, 2003). There are some concerns that increases in the export orientation of aquaculture production may displace small-scale producers, lead to greater market concentration and compromise local food security. In some countries, there are concerns about labour standards in the industry. As aquaculture production for international market has grown, there have also been conflicts between culture and capture producers. Fishermen have, for example, argued that the environmental issues associated with aquaculture - including pollution, coastal degradation and ‘escape’ of culture fisheries into the wild - could have a negative impact on ecosystem health and wild fish populations.\(^8\)

From a community development perspective, liberalisation may also have a polarising effect if some communities reap the benefits of increased trade while the majority remains poor. Where trade liberalisation motivates over-exploitation of fisheries, the loss of employment opportunities important to local people can compromise food security goals. Moreover, the potential benefits to the poor of the increased growth that accompanies trade should not be taken for granted. Without proactive measures by governments, it is not clear that enhanced local development and investment useful to the poor will transpire.

Tariff reductions have the capacity to incite structural change in the world’s fisheries industries, rendering some skills or equipment obsolete. Thus, many developing countries are working to control the pace at which they open their own markets to imports of fishery products and services to ensure liberalisation is consistent with, and complementary to, development objectives.

Liberalisation can also generate concerns in developed countries. Some producers in developed countries, such as Japan and Korea, fear that liberalisation of import tariffs could undercut their domestic fishing and processing industries by allowing more competitively-priced fish and fishery products to enter the domestic market. In particular, reductions of tariff escalation could cause greater competition and, in some instances, loss of competitiveness in processed fishery products. If imports depress the price of domestically-produced fish, this is likely to reduce wages, rents to equipment and even jobs. This explains why domestic fishing industries in developed countries are “typically a vehement opponent of free trade in fish, arguing for tariff protection, import quotas or other barriers to trade” (Hannesson, 1998).

Empirical evidence on the actual impacts of trade liberalisation on food security remains scarce. An FAO study of eleven developing countries concluded that overall, international trade in fishery products appears to have had a positive impact on food security. Growing fish production in LIFDCs (excluding China) did not appear to be diverted for exports as is often feared, and per capita supply increased slightly. Food imports, however, did not seem to have kept pace with demand in LIFDCs. At the same time, the conventional terms of trade in fishery products for the LIFDC were found to have deteriorated since the entry into force of the WTO Agreement in 1995 with a consequent loss of export earnings (Kurien, 2004).
3 SAFEGUARDS AND ANTI-DUMPING MEASURES

3.1 The policy issue

Non-tariff measures, such as safeguards, anti-dumping measures, standards, technical regulations and rules of origin, can play an even more significant role as possible barriers to market access than tariffs (Roheim, 2004). This chapter addresses two specific non-tariff barriers - safeguards and anti-dumping measures.

At the WTO, both safeguards and anti-dumping measures are the subject of specific agreements. In both instances, WTO Members have devised these rules to provide them with options for recourse when cheap imports from other Member states pose significant threats to their domestic industries. The conditions under which each may be applied and the policy tools used vary. Since developed countries are the primary importers of fishery products, they are also those that impose most anti-dumping measures and safeguards. These measures attract considerable criticism from developing countries who argue that the measures are too often deployed by developed countries to protect uncompetitive industries and market share. In the Doha Round, revisions to the WTO’s Agreement on Anti-Dumping are one subject of negotiations. Advocates of reform see these discussions as providing an opportunity for pursuing systemic changes in the WTO that would reduce the use of anti-dumping measures in the future.

3.2 Background and relevant facts

**Safeguards**

WTO Members may temporarily restrict imports of a product that can cause or threaten serious injury to domestic industry. The Agreement on Safeguards sets forth the rules for the application of safeguard measures. Major guiding principles include that:

- Measures must be temporary;
- Measures must be imposed only when imports are found to cause or threaten serious injury to a competing domestic industry or applied on a non-selective manner;
- Measures may be progressively liberalised while in effect; and
- Members imposing measures must pay compensation to the Member/s whose trade is affected.

Normally, in the fishing industry, safeguard measures are applied as import quotas. Of the three principal importers in the world, only the EU currently uses safeguard measures for its domestic fish processing industry against imports of fishery products (Ahmed, 2006). The EU safeguard clause is based on a reference price system - a domestic support measure which aims to ensure import prices do not undermine domestic price supports for similar species. If import prices for particular products fall below a particular ‘trigger price’, the EU’s safeguard measures are applied to restrict imports of those products. In February 2005, for instance, the EU imposed various safeguard measures on farmed salmon in the form of minimum import prices and tariff quotas (ICTSD, 2005a). The measures are targeted primarily at imports from Norway - which supplies about 60 percent of Europe’s annual consumption - while developing countries have been exempt.

**Anti-dumping measures**

The use of anti-dumping measures in international trade is governed by the WTO Anti-Dumping Agreement (ADA, formally known as the Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994). The WTO defines dumping
as selling a product on the export market at a price below the normal value (the price charged by a firm in its home market). WTO Members are entitled to take action against dumping if they can show that the practice has caused or threatens to cause material injury to the domestic industry competing with the imports.

In order to respond to dumping, the government must prove that dumping is taking place, calculate how much lower the export price is compared to the exporter’s home market price and show that the dumping is causing injury or threatening to do so. The Anti-Dumping Agreement gives minimum thresholds for price differences and the market share of imports necessary to allow for the introduction of anti-dumping duties. By way of retaliation, importing countries can ban imports and/or charge compensating duties on the underpriced products in order to legitimately protect domestic industry (Peacock, 2004). Three different kinds of anti-dumping measures can be applied to respond to dumping (Peacock, 2004):

- Countervailing Duties which are charged to a specific country or countries;
- Anti-dumping Duties which are targeted on specific offending companies; and
- Global Import Relief, such as Section 201 Import Relief (Trade Act 1974) in the United States, which is a global action that applies to all exporters of a given product.

Typically, anti-dumping actions involve the charging of an extra import duty on the product from the exporting country in order to bring its price closer to normal value or to remove the injury to the domestic industry. While the ADA is designed to protect domestic industries in the case of injury, the process is intensive and requires extensive resources, which may be a limiting factor for developing countries seeking to file, or counter, dumping claims.

Anti-dumping measures have become highly contentious issues in the fisheries sector (see Box 3.1), and several tensions have made their way to the WTO’s Dispute Settlement Mechanism. Importantly, the dispute settlement process is lengthy and has many stages - involving consultations, panel ruling, appeal and implementation - during which time an industry could suffer potentially significant long-term losses.

In addition, anti-dumping disciplines are subject to negotiations under the current Doha Round of trade talks. This mandate responds to demands from various developing and developed countries known as the ‘Friends of Anti-dumping’ (FAN) which have been calling for improved WTO disciplines on anti-dumping. The FAN group includes Brazil, Canada, Chile, Colombia, Costa Rica, Hong Kong, India, Israel, Japan, Mexico, Norway, South Korea, Chinese Taipei, Thailand, Singapore and Switzerland. In the WTO’s Negotiating Group on Rules, several developing and developed countries have jointly submitted concrete proposals that would impose stricter disciplines on anti-dumping methodologies.

In the meantime, to respond to the constraints posed by the imposition of safeguards and anti-dumping measures, some WTO Members have moved processing facilities to third-party countries or to the country imposing the duty. The ADA does not contain any provisions specifically related to this issue after Members failed to reach an agreement on specific text during the Uruguay Round. The US in particular has been strongly opposed to such circumvention measures. Third-party countries sometimes also raise objections. In Sri Lanka, for example, a case arose where the Sri Lanka Customs Department imposed a fine on a Singaporean company for channelling Vietnamese shrimp through Sri Lanka (LankaNewspaper, 2005).
This section reviews a number of proposals put forward at the WTO which are of relevance to addressing dumping in fish trade, followed by an assessment of the trade, environmental and socio-economic impacts of dumping and the application of anti-dumping measures.

3.3 Policy debates, tensions and challenges

This section reviews a number of proposals put forward at the WTO which are of relevance to addressing dumping in fish trade, followed by an assessment of the trade, environmental and socio-economic impacts of dumping and the application of anti-dumping measures.

Anti-dumping negotiations at the WTO

At the WTO, specific disputes have arisen about the way in which calculations leading to Anti-Dumping Measures are made. In the current negotiations on improving WTO anti-dumping rules, a number of issues have been raised of relevance to this case which could provide an opportunity to advance systemic changes in WTO rules. Some examples include:

- **Zeroing:** The Friends of Anti-Dumping have advocated the explicit prohibition of zeroing in calculating dumping margins - arguing that this method leads to
artificially inflated dumping margins. Through this practice, the investigators treat transactions with negative dumping margins as having margins equal to zero in determining weighted average anti-dumping margins. This proposal was also supported by India which calls for all negative values to be taken into account in the investigation (India, 2002). In 2005, Ecuador launched dispute settlement proceedings at the WTO in relation to the shrimp duties, submitting a request for consultations with the United States on the issue of zeroing (Ecuador, 2005).

- **Public interest**: A number of countries, in particular the Friends of Anti-Dumping (although excluding India), have proposed the inclusion of ‘public interest’ provisions in the ADA. These could include requiring Members to determine whether the proposed measure is in their economic interest; establishing minimum factors for consideration (such as downstream effects on importers, consumers or processors) or providing for the right of interested members of the public to present information. Such provisions would allow the views of and impacts on other affected stakeholders, such as the shrimp-consuming industry, to be taken into account in the investigation, rather than only the impacts on the domestic shrimp-producing industry.

- **Sunset reviews**: While the ADA stipulates that anti-dumping measures should be terminated after five years of their imposition, the option of reviewing - and if found necessary, continuing - the duties before terminating them (the so-called ‘sunset review’) has often resulted in a continuation of the measure. To minimise this practice, the Friends of Anti-Dumping (again excluding India) have called for making the termination of duties obligatory and requiring Members to initiate a new investigation to determine whether the threat of injury still exists. This approach would provide greater predictability for the affected domestic industry and give producers an opportunity to compete in the international market before new investigations have been completed.

Finally, the US has been pushing for anti-circumvention measures in the WTO, but has been virtually isolated in this respect (ICTSD, 2005c).

**Relevant international processes**

The key international forum in which safeguards and dumping relevant to the fisheries sector is discussed is the WTO. At the WTO, the Committee on Rules is the key permanent group which addresses these issues. For the Doha Round negotiations, this Committee is supplemented by the Negotiating Group on Rules.

**Policy objective: Profitability and export revenue**

The use of anti-dumping and safeguard measures provokes tense debate in international trade discussions. On the one hand, developed countries - the main users of these measures - argue that they are vital to protect their producers from dumping of cheaper developing country products on international markets. Developing countries, on the other hand, argue that these measures are simply one of the most pernicious tools used by developed countries to protect uncompetitive domestic industries and that they seriously impact market access and profitability for key export industries.

The United States has been a strong user of anti-dumping duties - instituting anti-dumping measures against Norwegian and Chilean farmed salmon, crawfish from China and farmed catfish from Vietnam (Roheim, 2004). The actual impact of anti-dumping and safeguard measures on trade flows and prices remains unclear. For instance, US imports of frozen catfish fillets from Vietnam dropped sharply in 2003 (Peacock, 2004). However, the prices of the filets failed to recover in the US as the industry had hoped and Vietnamese exporters appear to have shifted attention to new markets in particular in the
EU and other Asian countries. In the case of Chinese crawfish, the measures do not seem to have had a significant impact on imports of Chinese crawfish which continue to dominate the US market and have in fact grown since the duties were put in place (Roheim, 2004).

**Policy objective: Resource sustainability and environmental protection**

There are no specific linkages to be made between anti-dumping duties and safeguards and environmental considerations. In general, however, measures such as anti-dumping duties and safeguards are likely to have similar impacts as tariffs in cases were duties are imposed on the border. Where they act as barriers to trade for processed products they can undermine developing countries’ efforts to add value to their exports (which in turn could reduce pressures on countries to harvest more fish as their only way of extracting value from their natural resources).

**Policy objective: Social development, employment and food security**

The use of anti-dumping and safeguard measures can raise serious socio-economic concerns in targeted countries. Aquaculture production in particular, which has been the main target of safeguard measures in the past, is often dominated by small-scale family business (Peacock, 2004). These producers are most vulnerable to possible negative impacts as they will find it difficult to pay the required duties and bonds and therefore risk being marginalised vis-à-vis a few large-scale competitors. The measures can also have impacts in the importing countries (by raising costs for domestic consumers) and on local producers in related industries (by raising the prices of inputs for processing industries).

The impact of US anti-dumping measures on shrimp-producing countries in India provides a clear overview of the challenges. The Indian shrimp industry is dominated by small primary producers of wild-caught and aquaculture shrimp with an average farm size of around three ha, producing 1.6 tonnes annually (Peacock, 2004). Shrimp aquaculture - which accounted for 78 percent of shrimp exports in 2000 - provides livelihoods to one million people in South Asia, both in cultivation and ancillary activities (Salagrama, 2004). Fisheries exports in general, and shrimp in particular, play a significant role in India’s economy. In 2003, shrimp exports from India to the US accounted for almost US$ 400 million in export revenue (ITA, 2005). The imposition of duties by the US - amounting to between 5.02 percent and 13.42 percent for Indian producers (DOC, 2005) - is expected to result in a significant drop in exports with wide-ranging repercussions on the economic development of India’s shrimp-producing regions.

Interestingly, the US shrimp duties are also opposed by grocers, restaurants, processors, distributors, business councils and other consuming groups in the United States who came together under the Shrimp Task Force to campaign against the duties. These groups have pointed to likely impacts on employment and earnings in the United States, claiming that every job in the shrimp-producing industry is matched by 20 jobs in the shrimp-consuming (processing and distribution) industry (STF, 2005). They also predict that the price of shrimp in the US market would rise if the supply of cheap shrimp were reduced. In 2002, almost 90 percent of the US shrimp product supply came from imported shrimp, of which 70 percent is supplied by the countries targeted by US anti-dumping measures (Buck, 2004). Given the over-exploitation of wild fisheries, US production is unlikely to increase to compensate for lower imports, forcing importers to source from alternative countries such as Bangladesh (Peacock, 2004).
4 STANDARDS AND OTHER NON-TARIFF MEASURES

4.1 The policy issue

Non-tariff measures (NTMs) are most broadly defined as any public or private measure, other than tariffs, that have the potential for distorting international trade flows in goods (Clark, 1993). This chapter outlines some of the key non-tariff measures affecting international trade as well as the multilateral and national regulations that seek to govern them. While in some cases, industry and supermarkets have their own sets of standards, this section focuses on government-imposed standards, as these are the only standards covered by WTO agreements.

Producers engaged in international trade face a growing range of standards regarding the origins of products, the production processes and potential dangers such as the spread of invasive species or harmful parasites that accompany international trade. Importing countries often implement regulations that seek to control the types and quality of products that enter their ports or to collect information on the nature and source of the product to provide to consumers.

In practice, technical barriers to trade (TBTs) and sanitary and phytosanitary standards (SPS) are the non-tariff measures most frequently cited by developing countries as key barriers to trade in the fisheries sector. In the major importing markets, health, safety and quality requirements for imported fish and fishery products have steadily increased over recent years, particularly with the introduction of the Hazard Analysis Critical Control Point (HACCP) programs in the late 1990s (see Box 4.2; FAO, 2004b). In the case of wild fish, standards relate primarily to sanitary processing issues while in aquaculture standards also apply to the use and presence of chemicals such as antibiotics (Roheim, 2004). These standards pose a particular challenge for exports from developing countries who often find it difficult to meet the requirements of foreign markets. The stringency of SPS measures increases with each processing stage (OECD, 2003), thus raising additional hurdles with each step up the value chain. As communicable food-borne diseases and bioterrorism complicate transboundary relationships, many international and domestic standards have been further tightened. A number of countries have also recently introduced traceability and labelling schemes for fish and fishery products. A further NTM that can have significant impact on fisheries trade derives from the rules of origin that countries use at the national level to regulate trade.

Complying with non-tariff measures usually requires that exporters have the resources, infrastructure, implementation capacity and technical know-how to implement and monitor a wide array of processes. Faced with financial constraints, developing country governments and industries raise particular concerns that non-tariff measures restrict their access to export markets. On the other hand, some argue that meeting and adhering to international standards can also have a positive effect for developing countries, in particular by spurring new competitive advantages and investments in technological capacity (IISD/UNEP, 2005). A key international policy debate is whether standards-related restrictions are in place to protect domestic consumers or whether they constitute covert protectionism.

This chapter begins with a review of SPS and TBT measures followed by a discussion of the NTMs related to customs and administrative procedures such as customs valuations and import licensing. It proceeds with a discussion of rules of origin and traceability requirements as these are NTMs of particular importance to fisheries trade.
4.2 Background and relevant facts

Sanitary and phytosanitary measures

Sanitary and phytosanitary measures are designed to protect human, animal and plant health. SPS measures cover food safety as well as animal and plant health processes. They also involve inspection, examination and certification procedures. In recent years, increasing outbreaks of food-related illness and concerns about inter-regional disease transmission have driven a push towards more stringent SPS standards.

At the WTO, the SPS Agreement establishes a framework for Members seeking to regulate risks within their territory 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 main goal of the SPS Agreement is to balance the national interest in human, animal and plant safety with international trade interests. In other words, SPS seeks to find the appropriate balance between protection and protectionism by requiring that:

- Members ensure that any sanitary or phytosanitary measure is applied only to the extent necessary to protect human, animal or plant life or health; and
- regulations are based on scientific principles and sufficient scientific evidence.

Since these two provisions cannot be met under all conditions, Article 5.7 of the Agreement indicates that where relevant scientific evidence is insufficient, Members may provisionally adopt SPS measures on the basis of available pertinent information (including that from the relevant international organisations and from SPS measures that are used by other Member countries), provided they continue to seek sufficient scientific evidence. The SPS Agreement also requires that SPS measures “shall not be applied in a manner which would constitute a disguised restriction on international trade” (Article 2.3). Specifically, Members must ensure that their SPS measures are consistent with the non-discrimination principles of most-favoured nations and national treatment at the WTO. 9

To promote the use of international standards (rather than the proliferation of a complex series of different national standards), Article 3.2 states that measures that “conform to” international standards are presumed to be consistent with the SPS Agreement and the GATT. Currently, the Codex Alimentarius, or

Box 4.1: The Codex Alimentarius Commission

The Codex Alimentarius Commission was created in 1963 by FAO and the World Health Organization (WHO) to develop food standards, guidelines and related texts. Under the auspices of Codex, a Joint FAO/WHO Food Standards Programme produces codes of practice aimed at protecting the health of consumers, ensuring fair trade practices in the food trade and promoting co-ordination of all food standards work undertaken by international governmental and non-governmental organisations.

The Codex Commission also has a Committee on Fish and Fishery Products which is responsible for elaborating standards for fresh and frozen fish, crustaceans, and molluscs. During its regular sessions, this Committee adopts various fishery products into the international food code and has prepared a Code of Practice for Fish and Fishery Products. The Code of Practice for Fish and Fishery Products recommends an HACCP-based approach (see Box 4.2) as a means to enhance seafood safety (CCFFP, 2005). Section 5 of the Code of Practice incorporates Good Management Practices as well as the application of HACCP.
food code, is the preferred standard for food quality requirements (see Box 4.1). While harmonisation of international standards may help simplify import requirements, the risk is that standards will be harmonised at a level that is too high for some exporters to meet, or at a level that is too low to adequately protect consumers.

Alternatively, the SPS Agreement encourages Members to accept another Member’s SPS measures provided that they achieve the same level of SPS protection as the importing Member (commonly referred to as ‘equivalence’ or ‘mutual recognition’). In practice, however, developing country exporters have found it difficult and cumbersome to prove that their standards should be seen as equivalent.

The effectiveness and fairness of the SPS Agreement relies on transparency on the part of importing countries about their SPS requirements. WTO Members are required to notify new SPS measures to the WTO, including those related to fish and fishery products. In 2003, for example, the EU made some 545 SPS notifications for fish, crustaceans and molluscs (more than double the notifications in 2001) - a figure almost 30 percent higher than the EU’s average SPS notifications for food. The majority of EU notifications concerns Asia (particularly Thailand, Vietnam and India), followed by Africa and then South America. While the dominant cause for notifications by the EU and Japan on fishery products used to be microbial, notifications are now increasingly focused on chemical risks (e.g. heavy metal contamination such as high mercury levels) and residues of veterinary medicinal products. In 2002, for example, 65 percent of EU cases at the border focused on concerns about chemical risks while 31 percent focused on microbial concerns. From among the various product categories, shrimp garnered the highest number of notifications followed by fish (Ababouch et al., 2005).

To increase transparency while addressing the particular capacity concerns of developing countries, the SPS Committee in 2004 adopted specific measures to amend notification

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**Box 4.2: The Hazard and Critical Control Point (HACCP) method**

HACCP is the method chosen by the Codex Alimentarius for ensuring the safety of a wide variety of foods provided on a commercial scale. HACCP establishes target and acceptable hazard levels and identifies the appropriate tests for monitoring, measuring and correcting these levels at a series of control points throughout the food handling process (McDorman, 1997). The HACCP System consists of seven principles (FAO/WHO, 1997):

- conduct a hazard analysis;
- determine the critical control points;
- establish critical limits;
- establish a system to monitor the critical control point;
- establish the corrective action to be taken when monitoring indicates that a particular critical control point is not under control;
- establish a procedure for verification to confirm that the HACCP system is working effectively; and
- establish documentation concerning all procedures and records appropriate to these principles and their application.

HACCP implementation requires several substantial technical and economic resources. The science-based approach to monitoring requires worker training and monitoring equipment. The internal auditing of HACCP-based systems also demands comprehensive record-keeping and the continuous integration of new technologies as they develop.
procedure, to require Members to engage in bilateral consultations if an exporting country identified significant difficulties in complying with proposed regulations, including the option of special and differential treatment (SDT) (ICTSD, 2004b). While this agreement was widely welcomed as an important step in facilitating compliance with market standards, no country has so far made use of this new mechanism.

In terms of the capture fisheries sector, the SPS issues that arise usually relate to storage and processing issues. For example, the EU imposed bans on seafood imports from India, Bangladesh, Madagascar, Kenya, Tanzania, Mozambique and Uganda between 1997 and 1998, citing food safety concerns in processing or contamination prior to catch (Filhol, 2000).

SPS standards are also a crucial issue in aquaculture. Problems include traces of chemicals such as antibiotics and fungicides that remain in the fish and disease outbreaks among farmed animals. In 2001, for example, the EU proceeded to examine 100 percent of shrimp products imported from China, Thailand, Vietnam, Indonesia and other countries because they discovered residual antibiotics in some products (Greenhalgh, 2004).

**Technical barriers to trade**

Technical barriers to trade include technical regulations, standards and conformity assessment procedures for products including provisions on quality and composition standards, labelling, and source and origin information requirements, all of which have the potential to limit exporters’ capacity to enter markets (Stephenson, 1997; Wilson, 1996).

Like the SPS Agreement, the WTO’s TBT Agreement seeks to balance the safety and security objectives of standards against their trade-distorting potential by mandating that procedures do not create unnecessary obstacles to international trade or discriminate in favour of domestic producers. The TBT specifies that legitimate objectives include, *inter alia*, national security requirements, prevention of deceptive practices, protection of human health or safety, protection of animal and plant life or health or the environment.

To ensure the balance, the TBT Agreement:

- encourages ‘standard equivalence’ between countries. Like the SPS Agreement, the TBT Agreement indicates that different technical regulations that fulfil the same policy objectives even if through different means are presumed allowable (Article 2.7);
- promotes the use of international standards to increase coherence and reduce the number of different hurdles with which exports must comply;
- encourages the specification of product regulations in terms of performance rather than design or descriptive characteristics (Article 2.8); and
- mandates that countries notify each other of changes in their standards.

As mentioned above, it is primarily the major importers of fishery products that make TBT notifications. A recent conflict between Peru and the EU over the way in which sardines were labelled is one concrete example of TBT issues that can arise. In this particular case, the tension was resolved by using the Codex Alimentarius as an internationally-agreed reference standard (Park and Wold, 2005). A similar dispute erupted between the United States and producers in Asia over the use of the term ‘catfish’ for similar fish that are technically different species (Asia Times, 2003; Coleman, 2005). The labelling ban led to a drop in the Vietnamese catfish’s share of the US market from 20 percent to 12 percent. Similar disputes are likely since certain names have been invested in as brand or species names (for more information on labelling schemes, see Chapter 5).

**Customs and administrative procedures**

Customs and administrative procedures - such as rules of origin and import licensing, customs valuation, customs formalities and classification - can also present non-tariff barriers to trade.
**Customs**

Customs valuation rules can act as trade barriers if prices are overestimated for customs purposes. The WTO attempts to control potential negative by-products of customs rules through its Agreement on Customs Valuation (formally known as the Agreement on Implementation of Article VII of GATT, 1991). This Agreement aims for a fair, uniform and neutral system for the valuation of goods for customs purposes that conforms to commercial realities and outlaws the use of arbitrary or fictitious customs values. The Agreement provides a set of valuation rules, expanding and giving greater precision to the provisions on customs valuation in the original GATT.10 Other concerns include inconsistent and varying customs classification. Together with excessive customs formalities and unnecessary delays, they can increase the transaction costs that exporters face to access some markets (Fliess and Lejarraga, 2005). Further, customs requirements regarding minimum import quantities can also constrain the ability of exporters, particularly from developing countries, to trade in small quantities of goods.

**Import licensing**

Import licensing is the practice of requiring documentation, other than that required for customs purposes, for importation of a good into a customs territory. The need for supporting documents and the lack of transparency in the import licensing process can substantially delay the import process. Such delays can be especially problematic for imports of perishable fishery products.

The WTO’s Import Licensing Agreement requires governments to publish sufficient information for traders to know how and why licenses are granted. The Agreement specifies that import licensing procedures must be simple, transparent and predictable and calls on countries to notify the WTO upon the introduction of new import licensing procedures or a change in existing procedures. Further, it requires that license requests are processed in a limited timeframe.

**Rules of origin**

Various schemes exist that require the declaration of origin of the fish and fishery products for different purposes, including the tracing of a product through the supply chain, assessing compliance with fishing quotas, and applying tariff levels or safeguard measures.

At present, each importing country or region defines its own rules of origin. Both the US and EU require mandatory declaration of country of origin and method of production (capture fisheries or aquaculture) for fish and fishery products (see discussion of traceability below). In the United States, the 2002 Farm Security and Rural Investment Act (Farm Bill) requires US retailers to notify their customers of the country of origin of fish and shellfish and to declare whether the fish was caught in the wild or farmed. The Country of Origin Labelling (COOL) legislation outlines definitions, requirements for consumer notification and product marketing and the record-keeping responsibilities of both retailers and suppliers for fish and shellfish commodities (Federal Register, 2004).11 In the EU, the European Directive 2005/2001 requires fishery products to be labelled with the origin (i.e. the country of origin in the case of freshwater and farmed fish, or the catch area in the case of products caught at sea) as well as the production method (i.e. caught at sea or in freshwater, or resulted from aquaculture). This information must be available at each stage of marketing by means of labelling, packaging or accompanying commercial documentation. Such mandatory requirements can pose a particular challenge in the fisheries sector given that fish are traded in raw, semi-processed and processed forms and are caught by multiple vessels in many parts of the world (OECD, 2003).

Labelling of origin and product tracing are also increasingly relevant tools used in fisheries management and conservation to ensure compliance with fishing quotas (see discussion of ecolabelling and catch certification schemes in Chapter 4 and Chapter 8 respectively). The importance of such efforts was highlighted in the United Nations Code of Conduct for Responsible
Fisheries. The Code indicates that “states should ensure that international and domestic trade in fish and fishery products accords with sound conservation and management practices through improving the identification of the origin of fish and fishery products treated”. The Parties to the 1980 Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), for example, have a catch certification scheme to restrict unreported and/or illegally harvested Patagonian toothfish by requiring that imports be accompanied by a valid certificate of origin. Similarly, the International Commission for the Conservation of Atlantic Tunas (ICCAT) introduced a Bluefin Tuna Statistical Document Programme for frozen bluefin (1992) and fresh bluefin (1993). The Programme aims to increase the accuracy of bluefin statistics and track unreported fish caught by non-members and fleets flying flags of convenience. Further information on these initiatives is provided in Chapter 8.

For developing countries, rules of origin are particularly significant as they can influence which goods qualify for preferential market access in key markets. According to the rules of origin in some countries, the origin of a particular fish is based on the flag and ownership of the vessel, rather than the site in which it was caught. As such, even though two fish may be caught alongside each other, if they are caught by vessels from different countries, the fish may be deemed to have different origins and thus eligible for different import preferences. The EU’s rules of origin related to preferential access for ACP countries provide a case in point. In respect of ‘origin’, these rules specified that only fish caught within 12 nautical miles of the shore ‘originated’ in that particular country - as such only those fish would qualify for lower tariffs in lucrative EU markets. If fish were caught outside this boundary, a series of criteria conditioned the granting of preferential access (i.e. the fish had to be caught on an ACP or EU registered vessel and sail under an ACP or EU flag; the crew had to include at least 50 percent EU and/or ACP nationals; and the vessel was to be at least 50 percent owned by EU/ACP nationals). In March 2005, the European Commission adopted a strategy to overhaul their rules, making them simpler and more transparent, particularly for fishery products originating in developing countries. Under the proposal, the origin of fish would be based on the flag, registration and “simplified yet adequate conditions regarding property”, while the crew conditions would be removed (ICTSD, 2005a).

WTO rules explicitly accommodate the possibility of national requirements for a ‘mark of origin’ - such as a label identifying the country of origin - on imported products (Article IX of the GATT). To address the complexity of rules of origin, the WTO’s Agreement on Rules of Origin calls on WTO Members to ensure that rules defining the origins of products are transparent, do not restrict, distort or disrupt international trade, and are implemented consistently and uniformly. The Agreement is working alongside the World Customs Organization to define a single set of harmonised rules which limit bureaucratic discrepancies that constrain market access.

According to WTO rules, so long as the origin of ‘like’ domestic products is equally identified, then the requirement for a mark of origin on all imported fishery products should not constitute discrimination. The current WTO language on this issue, however, restricts the information that countries can require on the ecological origin of imported processed fishery products. The WTO defines the point of origin as the “country where the good has been wholly obtained, or, when more than one country is concerned in the production of the good, the country where the last substantial transformation has been carried out”. For example, if a fish were caught in Namibia but processed and packaged in Thailand, the country of last substantial transformation would be Thailand. In order to explicitly permit information on the ecological origin (as opposed to the ‘country of last substantial transformation’), WTO Members would have to change the existing ‘mark of origin’ language.
Traceability

The Codex Alimentarius Commission has defined traceability/product tracing as “the ability to follow the movement of a food through specified stage(s) of production and processing and distribution” (CAC, 2004; ICTSD, 2004a). For example, a traced product could offer information on the origin of materials and parts, processing history, and the distribution and location of the product at various points in its production. By using traceability measures, regulators seek to:

- identify unsafe products that can be withdrawn and distinguished from post-market safety aspects;
- provide consumers with information on quality e.g. nutritive or medical claims and fair practices;
- comply with security aspects of food marketing such as those that fall under the US Bioterrorism Act; and
- achieve business management goals associated with quality controls, business partnerships, production and distribution and industry integration.

Product tracing rules are increasingly important in developed countries, particularly for products labelled for their production and process characteristics such as organic foods or ‘fair trade’ products (Derrick and Dillon, 2004).

In 2004, the Codex Alimentarius Commission adopted a Model Certificate for Fish and Fishery Products (Sanitary Certificate) which can be used to certify fish and fishery products that meet food safety, wholesomeness and conformity to food production requirements of the importing country. The model certificate was developed to limit the number and types of certificates and thereby facilitate trade flows.

In developing countries, there is concern that traceability requirements may involve significant compliance costs. On the other hand, there are considerable economic incentives for complying with traceability requirements. In the first instance, many importing countries may have distinct, mandatory traceability requirements. In addition, a growing number of consumers are expressing a willingness to pay higher prices for organic, ecolabelled or country-of-origin labelled products. In addition, product tracing is now an integral part of many ecolabelling schemes which aim to help reward producers for sustainably-harvested fishery products (see Chapter 5 on ecolabelling). Debate continues as to whether the value of such markets is high enough to offset the costs of implementing traceability mechanisms.

4.3 Policy debates, tensions and challenges

This section begins with a brief review of tensions regarding the legitimacy of standards. It then considers the debates that arise with respect to three different areas of policy objectives.

Standards, harmonisation and sovereignty: consumer protection or protectionism?

As the use of non-tariff measures proliferates around the world, a core tension in policy debates concerns the legitimacy of standards. In the trade arena, a core concern is that standards may limit trade access. While standards may indeed aim to achieve safety or quality objectives to protect consumers, there are frequently concerns that standards represent covert strategies for protecting domestic industries. Importantly, the point here is not that all protection of local industries is bad, but that environmental or other standards ought not be used to achieve that protection. There is also considerable debate over which authorities should have the power to develop standards, as well as which authorities are responsible for meeting them.

Decisions on standards and related regulations are often taken in response to political pressure from domestic interests. While protections such as these have the potential to positively impact domestic industries, they can do so at the considerable expense of foreign exporters.
In cases where import standards are not met, exporters may lose not only the value of the commodity, but may also fail to cover the costs they incurred in trying (unsuccessfully) to comply with these standards.

**Relevant international processes**

The WTO sets the main framework for managing non-tariff measures. Setting initial guidelines for acceptable use of standards, the WTO relies on a series of international mechanisms for standards, certification and harmonisation efforts, including the Codex Alimentarius Commission, HACCP, the WCO and the International Standards Organization (ISO). Additionally, the WTO plays a crucial role as an arbiter of disputes between Member countries that arise over discrepancies or purported unfair use of non-tariff measures.

The expansion of regional trading arrangements has also created a series of new regional and bilateral frameworks for managing national standard and monitoring objectives. Several regional trade agreements have specific chapters that balance the objectives of standards with a desire to minimise the potential obstacles to trade that they might create. For example, Chapter 9 of NAFTA recognises the importance of standards and technical regulations and provides a framework for enhancing safety and reducing trade obstacles within the free trade area. Further, it expands upon WTO provisions by extending obligations to include measures from provincial, state-governmental and non-governmental standards bodies. It also strengthens obligations on equivalence, the use of international standards, conformity assessment, transparency and notification.

**Policy objective: Profitability and export revenue**

Many countries have raised concerns that non-tariff barriers to trade limit or eliminate their access to key export markets. NTMs can result in the loss of the goods and earnings on the part of the exporting company and country, often without compensation. The costs of NTMs can be direct and indirect, as well as recurring and non-recurring and can arise at different points along the supply chain.

There is particular concern in developing countries about the trade-distorting effects of rules and regulations on environmental, safety, health and technical standards for fish and fishery products. As noted in Chapter 1, many developing countries are highly dependent on developed country markets - all of which have increasingly tight regulatory frameworks in place. Many developing country exports face rejection at foreign borders for failure to meet quality standards, despite measures to conform. These rejections can have serious implications for exporting economies, including losses of foreign exchange earnings, bankruptcies and unemployment. Developing countries have emphasised that the burden of complying with these 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 high (Amjadi and Yeats, 1995; Gupta, 1997; Kulkarni, 2005; Pearson, 1998). While the US, EU and Japan all have national requirements for imports, the EU attracts the greatest criticism for the challenges that their complex and comprehensive standards impose on exporters.

The resulting technical, bureaucratic, implementation and monitoring costs can pose a major challenge to small, medium-sized and even large industries in developing counties and to their governments. In the realm of production, the need to comply with import standards can add considerable costs at landing and aquaculture sites. In processing industries, international standards may require substantial investments in upgrading infrastructure, monitoring, and new equipment as well as training and employment of qualified staff. The cost of complying with health and safety requirements can include planning, documentation, training and maintenance, appraisal, inspection, packaging, laboratory and recording costs, and failure costs (van der Meer, 2004). The fishing industry may incur costs for
increased inspection, certification capacity and quality of services. Along the entire supply chain there may also be additional costs to update quality-control systems and a high degree of risk that products may be banned, rejected or need to be re-packaged. Compliance costs vary widely by country, reflecting different products and facility conditions, differences in compliance strategies and historical factors such as the age of factories.

A final challenge is that oft-promised resources to help developing countries meet developed countries’ product standards are often insufficient. As noted above, in the case of the EU, responsibility for the implementation and enforcement of its food safety legislation is delegated to the exporting country authorities. This requires that the exporting country is responsible for monitoring measures prior to processing, including in small-scale and non-industrialised sections of the market. For their part, developed countries can be reluctant to relieve foreign industry production costs that could later pose competitive challenges to domestic industries.

Efforts by developing countries to respond to non-tariff measures in developed countries are further complicated by the multitude of different (sometimes incompatible) standards, regulations and procedures. The variety of rules can significantly raise the costs for exporters (to gather information and comply with all the different requirements). In some instances, international harmonisation could help reduce the obstacles to international trade and make compliance both consistent and easier to achieve. In the case of many health, safety and environmental standards, 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. There is also the risk that harmonisation may simply reflect developed country standards that developing countries have difficulty meeting. Alternative options are to reduce compliance costs by promoting greater transparency of standards, co-operation at the regional level, heightened communication between countries, or mutual recognition of standards. Article 6.3 of the TBT Agreement, for example, strongly encourages WTO Members to enter into negotiations with other Members for the mutual acceptance of conformity assessment results (to enable exporters to reduce the range of different compliance procedures they must undertake).

On the other hand, it is important to note that diverse standards and regulations between different countries or regions can be warranted because: a) economic, social and environmental conditions differ from one country to another (what is appropriate in one set of circumstances may be inappropriate in another); b) national and regional weights given to conservation, economic, social and cultural sub-goals differ, particularly when compared to other national goals (such as the value placed on charismatic species such as dolphins and turtles among some groups in developed countries); c) conditions in different fishery ecosystems and appropriate methods for management may differ depending on the country or situation; and d) product health and safety standards for rich and poor countries may differ significantly if there are considerable cost differences between high and low standards.

Importantly, while costs might be significant for exporters, compliance with standards also has the potential to offer producers opportunities for economic growth. With all compliance mechanisms in place, producers can secure new and potentially highly profitable foreign markets. To comply with EU standards, for example, Nicaragua and Bangladesh spent US$ 560,000 and US$ 290,000 respectively to upgrade their facilities (and spent US$ 18 million and US$ 2.4 million respectively on annual maintenance costs). Ultimately, these initial costs represented just 2.3 percent and 0.61 percent of their respective export values - indicating that compliance brought about large net benefits. However, decisions must be made carefully in order to balance costs and benefits and ensure that inputs are economically
worthwhile. Bangladesh and India, for example, have suffered trade losses in some instances due to difficulties in complying with SPS standards in the area of infrastructure and hygiene in fisheries establishments (Ahmed, 2006).

**Policy objective: Resource sustainability and environmental protection**

The links between non-tariff measures and resource sustainability vary considerably. There are several examples of standards or labels such as those that define a product as organic or sustainability harvested, which have strong potential for positive environmental impacts in the exporting country (see Chapter 5 on ecolabelling). Some specific quality standards for fishery products are closely related to pursuing environmental and health objectives in the importing country - such as minimising environmental toxins in fishery products.

**Policy objective: Social development, food security and employment**

In principle, a core purpose of several non-tariff measures is to safeguard particular public interests in importing countries. SPS and TBT standards may be designed with an eye to protecting consumers and ensuring that they have a supply of safe food. On the other hand, non-tariff measures that advance these social goals in some countries may simultaneously constrain both economic and development opportunities in other countries that bear the burden of compliance. Where countries cannot comply with foreign rules and regulations governing imports, this can not only frustrate their opportunities to expand and diversity exports, but can also have specific micro-economic effects. In particular, where exports are rejected by foreign markets, this can slow down or eliminate local employment opportunities and reduce local investment. Export-based businesses that ignore foreign standards risk failure. Small-scale producers, in particular, often lack the capacity to comply with export markets’ standards or deal with consequent repercussions on income and employment.

Compliance with export standards could potentially have positive spill-over effects in the exporting country by leading to a general rise in standards across the industry, both for export and domestic consumption. At the same time, however, concerns have been raised that stringent standards in export markets might lead to two-tier production systems in the producing countries where considerably lower SPS standards are applied to fish and fishery products destined for domestic consumption.
5 ECOLABELLING AND OTHER MARKET-BASED CONSUMER AND INDUSTRY INITIATIVES

5.1 The policy issue

In the past decade, several ecolabelling initiatives have been introduced in the fisheries sector. The goal of these efforts has been to harness market-based incentives to improve fisheries management systems and to maintain the productivity and economic value of the industry.

Box 5.1: 2005 FAO guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries

In 2005, the FAO published voluntary Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries (FAO, 2005). These Guidelines are applicable to ecolabelling schemes designed to certify and promote labels for products from well-managed marine capture fisheries. The guidelines cover terms and definitions, minimum substantive requirements and criteria, as well as procedural and institutional aspects of the ecolabelling of fish and fishery products from marine capture fisheries.

The guidelines state that ecolabelling schemes for marine capture fisheries should:

- recognise the sovereign rights of states and comply with all relevant laws and regulations.
- be of a voluntary nature and market-driven.
- be transparent, including balanced and fair participation by all interested parties.
- be non-discriminatory, not create unnecessary obstacles to trade, and allow for fair trade and competition.
- provide the opportunity to enter international markets.
- establish clear accountability for the owners of schemes and the certification bodies in conformity with international standards.
- incorporate reliable, independent auditing and verification procedures.
- be considered equivalent if consistent with these guidelines.
- be based on the best scientific evidence available, also taking into account traditional knowledge of the resources provided that its validity can be objectively verified.
- be practical, viable and verifiable.
- ensure that labels communicate truthful information.
- provide for clarity.
- be based, at a minimum, on the minimum substantive requirements, criteria and procedures outlined in the guidelines.

The guidelines also highlight that the principle of transparency should apply to all aspects of an ecolabelling scheme including its organisational structure and financial arrangements.
While at present the market share of ecolabelled fishery products remains small, some ecolabelling initiatives are carving out a clear niche for their products. Even if some fail, there will likely be renewed efforts from governments, private industry and NGOs to initiate similar market-based approaches to promoting sustainable fisheries, from consumer boycotts to corporate initiatives to purchase fishery products only from sustainably-managed fisheries (Roheim and Sutinen, 2006).

Ecolabelling schemes present a variety of opportunities as well as challenges and have met with varying degrees of acceptance from different stakeholders. Aspects of ecolabelling that provoke concern include the transparency and the scientific basis of the criteria used to authenticate labels, consumer responsiveness, the potential impact on international trade in fish and fishery products, and the appropriate role of government in voluntary labelling and certification. Governments and producers have clear interests in ensuring that ecolabelling schemes do not constitute disguised protectionism - developing countries and producers in particular call for special consideration in this respect. In the WTO context, there are also important distinctions in the manner in which trade rules treat voluntary as compared to mandatory standards.

In early 2005, to help address some of these concerns, the FAO released draft guidelines for ecolabelling schemes in the fisheries sector (see Box 5.1). Still in play, however, is the effort to clarify the relationship between ecolabels and international trade rules and create synergies between the two. The degree of compatibility, or conflict, with WTO rules in particular depends on the specific form of labelling adopted. One topic that will be addressed here in more detail is the extent to which similar products are subject to equivalent requirements regardless of national origin.

5.2 Background and relevant facts

What are ecolabels?

Ecolabels are certifications given to products that are deemed to have fewer impacts on the environment than functionally or competitively similar products. Designed to offer market-based incentives for improved fisheries management, ecolabelling initiatives link fishery products to their production processes. Ecolabels generally rely on life-cycle ('from cradle to grave') assessments of the environmental impacts of products. They aim to tap into growing consumer demand for environmentally preferable products, channelling purchasing power towards seafood products from sustainably-managed fisheries and/or aquaculture activities. By appealing to consumer preferences, the ecolabelled products may generate higher returns than those that either do not qualify for ecolabelling, or those whose producers do not seek to obtain such labelling.

There is a range of possible approaches to labelling fish and fishery products (Leadbitter, 2004). Already several national, international, industry-sponsored, NGO-led and consumer-supplier partnership certification and standards schemes in the fisheries sector exist - each with distinct criteria and assessment methods that have variable levels of transparency. The claims made by ecolabels also vary widely - some indicate that a product is not overfished, others focus on the absence of marine mammal by-catch, and still others emphasise the absence of any by-catch of any sort. Still others promise the product is 'ecosystem-friendly'.

Ecolabelling schemes that rely on certification come in several different forms (see Box 5.2). They may be organic or non-organic (see Box 5.3) and they may involve either first, second or third-party certification:

- **First-party labelling schemes** are established by individual companies based on their own product standards. This form of ecolabelling can also be referred to as 'self-declaration'. The standards
are often based on criteria related to specific environmental issues known to informed consumers through the media or advertising. Perhaps the most public example of first-party labelling is ‘dolphin-friendly’ tuna.

- **Second-party labelling schemes** are established by industry associations for their members’ products. The members elaborate certification criteria, sometimes by drawing upon external expertise from academia and environmental organisations. Verification of compliance is achieved through either internal certification procedures within the industry or the use of external certifying companies.

- **Third-party labelling schemes** are usually established by a private initiator, independent of the producers, distributors and sellers of the labelled products. Products supplied by organisations or resources that are certified are then labelled with information that the product was produced in an ‘environmentally-friendly’ fashion. The label, or seal, is typically licensed to a producer and may appear on or accompany a product derived from a certified fishery or producer. Producers are usually expected to track the ‘chain of custody’ of their products in order to ensure that the products derived from the certified fishery are in fact those that are so labelled. In some instances, the private

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### Box 5.2: Three examples of existing ecolabelling schemes

*’Dolphin-safe’ labels:* A variety of producers in the United States have made self-declarations that their tuna is ‘dolphin-safe’ (i.e. caught without harming wild dolphins). The Dolphin Protection Consumer Information Act (DPCIA) of 1991 established criteria for the manner in which tuna must be caught to be dolphin-safe. Ultimately, companies can then label their tuna ‘dolphin-safe’.

*The Marine Stewardship Council (MSC):* The MSC is an independent, not-for-profit, international body headquartered in London, UK. It was initiated by WWF and Unilever, a large fish retailer, to promote sustainable and responsible global fisheries and fishing practices (MSC, 2005). The MSC has, in collaboration with a selected group of parties interested in and experienced with fisheries issues, established a broad set of Principles and Criteria for Sustainable Fisheries, which includes protection of target fish stock and protection of surrounding habitat and ecosystems. Fisheries meeting these standards are eligible for third-party certification by independent certifying bodies accredited by the MSC. On a voluntary basis, fishing companies and organisations can contact certifiers in order to have a certification procedure carried out. The MSC also encourages fish processing, wholesaling and retailing companies to make commitments to purchase fish from certified fisheries only. Unilever, for example, has pledged to buy only MSC-certified fish and in 2005, 46 percent of its European fish products were made from certified fish. Wal-Mart also pledged only to buy MSC fish. As of February 2006, there were more than 300 MSC products sold in major retail chains in more than 24 countries (Wal-Mart, 2006).

*The Marine Aquarium Council (MAC):* MAC, a non-profit international organisation based in Hawaii, brings together representatives of the aquarium industry, lobbyists, conservation organisations, government agencies and public aquariums aimed at conserving coral reefs by creating standards, educating and certifying those engaged in the collection and care of ornamental marine life from reef to aquarium. MAC 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.
An accrediting body provides some degree of assurance that the certifier has been trained by an accredited training program and is qualified to perform an evaluation against a specific set of criteria in a given field. While the criteria may be established through a negotiation process among the various interested parties, they are often motivated by the environmental objectives of the private initiators of such schemes. Environmental organisations and consumers generally prefer ecolabelling schemes of this type because private commercial interests will not compromise the criteria applied to the schemes and require strict compliance based on verifiable and impartial certification procedures.

Ecolabelling schemes can be either mandatory or voluntary. Mandatory ecolabels are those required by government. In this case, some governments may restrict imports that do not comply with mandatory ecolabels (thus representing a trade restriction for foreign producers). In the case of voluntary labels, it is up to the manufacturer to decide whether or not to apply for certification of the product. Moreover, imports of products that do not comply with ecolabelling schemes are not restricted; rather, retailers and consumers choose whether to buy an ecolabelled product.

Voluntary ecolabelling programs may be funded and supervised by either the private sector or government.

Assessing the impacts of ecolabels continues to pose a challenge. This is partly due to the fact that certification as a tool is still fairly new and few industry data have been gathered and made available so far. Also, the causality between the labels and the observed environmental or socio-economic changes remains difficult to establish.

### Other market-based schemes

While the main focus of this chapter is on certification schemes, it is important to note that there are several other market-based approaches to improving fisheries management, most of which focus on harnessing consumer awareness (Roheim and Sutinen, 2006).

Some producers, for example, have established recommendations on best practices or codes of conduct which they then make reference to on their product labels. Such recommendations include Industry Standards for the Live Reef Food Fish Trade, the Federation of European Aquaculture Producers Code of Conduct for European Aquaculture, the FAO Code of Conduct for Responsible Fisheries (CCRF) and various national standards and codes, such as the Thai Marine Shrimp Culture Codes of Conduct. Identification labels certifying the

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**Box 5.3: The new frontier: labels for organic fish**

Some companies are working to win a marketing niche with ‘organic seafood’. Organic labelling usually signifies that food has been produced without artificial inputs - especially synthetic fertilisers and pesticides - and has been grown using environmentally-sound farm management techniques.

While organic labelling of seafood focuses primarily on aquaculture products (such as farmed salmon), producers of wild salmon, nervous about a loss of market share to ‘organic’ farmed salmon, have also been exploring the possibilities of certifying certain wild-captured fish as organic. In Alaska, for example, industry has garnered the support of leading State politicians to push for the definition of standards for the certification of wild salmon as organic (Bayne, 2003). The challenges to this task are many. Some advocates of stringent organic standards argue that wild fish should not qualify for organic labels because of the difficulty knowing, or controlling, the environment fish visit as they travel at sea.
Box 5.4: The seafood industry’s market-place efforts to promote sustainable fishing

A considerable amount of energy and resources is being expended in the seafood industry worldwide to promote the purchase of seafood only from sustainable sources. This is particularly true in Europe, where major corporations have built entire food-sourcing campaigns around sustainable seafood initiatives. The following is a partial list, prepared by Roheim and Sutinen (2006), of European and American corporations which have posted information about their initiatives on their websites. This list is illustrative of the variety of approaches that are being taken by seafood retailers.

Unilever’s Fish Sustainability Initiative (FSI)

Unilever was at the forefront of establishing the Marine Stewardship Council. Among Unilever’s stated purposes for creating the MSC was the concern that in a few years’ time there would be few sources of seafood from which to supply products for its consumers - thus creating the MSC was one risk management strategy for the firm. The Fish Sustainability Initiative (FSI) can also be viewed as a means of appearing or being ‘green’ to its consumers. In 1996, Unilever’s goal was to achieve 100 percent of its sourcing from sustainable seafood sources by 2005.

Within the FSI, Unilever takes several actions. First, it uses sustainability as a criterion when selecting its supply fisheries. Second, when a fishery has not yet been certified by the MSC, they assess it internally on five sustainability criteria and apply a traffic light approach to progressively shift purchases towards more sustainable sources. The five criteria are based on FAO’s Code of Conduct for Responsible Fisheries. Third, Unilever is working with fisheries and encouraging them to adopt sustainability criteria. Fourth, Unilever is encouraging fisheries scoring high in the traffic light system to apply for MSC assessment and certification. Finally, it is selling MSC-labelled seafood products for the retail market throughout Europe.

Unilever applies its Fish Sustainability Initiative to all fish and seafood-containing products it supplies to the market. The company estimates that about 50 percent of its total supply of fish comes from sustainably-managed fisheries. While admitting that it has not met its target of achieving 100 percent sustainably-sourced fish by 2005, Unilever believes it has made excellent progress and is intent on continuing to do so (Porritt, 2005).

Unilever also attempts to avoid inadvertent purchases of IUU fish by not engaging in spot-buying of fish, but rather has 30 regular suppliers who use traceability systems that can trace raw material back to the captain for almost everything. This traceability (discussed in Chapter 4 of this paper) was required within Unilever as company policy long before the sustainability initiative.

J Sainsbury plc – United Kingdom

In 2002, Sainsbury’s committed to sourcing all its wild fish from sustainable sources by 2010 and works closely with the MSC. There are 12 MSC-labelled product lines currently available in Sainsbury’s stores, but they only account for one percent of total fish sales. To address this, Sainsbury’s is focusing on a number of key areas:
• Sainsbury’s ‘Fish Integrity Group’ monitors progress towards the sustainability target and will address issues as they arise. It appears to be designed to encourage suppliers to obtain certification to the MSC standard in the long-term.

• MSC Tuna Conservation Project is a three-year jointly-funded project with the MSC to encourage the tuna industry to adopt sustainable fishing practices beginning in 2002. A dedicated tuna fisheries officer, based in the MSC’s Asia Pacific office, was focused on identifying potential tuna fisheries as candidates for eventual certification to the MSC Standard for sustainable sourcing of tuna, which would include addressing the IUU problems. One albacore fishery in the US is seeking certification as a result.

• Sainsbury is working to raise consumer awareness of fish sustainability issues and communicate the availability of sustainable alternatives to traditional British favourites such as cod and haddock.

**Waitrose – United Kingdom**

Waitrose supports sustainable fishing and has a policy of sourcing from well-managed fisheries. Waitrose claims that all the cod it sells is from Iceland and states that Iceland is considered to have one of the most well-managed, sustainable fisheries in the northern hemisphere. The company sells only line-caught cod, rather than trawled fish since large trawl nets can cause damage to fish stocks (by catching small juvenile fish) and the marine environment. Stating that European hake numbers are below safe limits, Waitrose sells hake only from South Africa, which is now MSC certified. Waitrose sells other MSC-labelled products in its stores, including Cornish handline mackerel, Alaskan salmon, and Western Australian rock lobster.

**Royal Ahold (Netherlands) – owners of Stop & Shop Supermarkets – United States**

Stop & Shop established the ‘Ecosound’ project to distinguish itself as a thorough, trustworthy provider of seafood in its market through its wholesale buying decisions. The project, a partnership with the New England Aquarium formed in 2001, uses the results of independent science-driven research on wild-harvested species to give preference to suppliers from sustainable species, delisting suppliers with inadequate traceability systems.

**Whole Foods Market – United States**

Whole Foods Market is the world’s leading retailer of natural and organic foods, with 172 stores in North America and the United Kingdom and is very actively involved in ‘Fish for Our Future’, a sustainable seafood educational awareness program. In 2003, Whole Foods Market provided a US$ 225,000 grant to the MSC to retain a dedicated Fisheries Outreach Officer to identify more fisheries in the Americas which can be certified against the MSC Standards. Whole Foods Market has been instrumental in promoting the MSC program for sustainable fisheries in North America. It was the first American retailer to carry MSC-labelled Alaska salmon and remains the only major American retailer to carry a variety of MSC-labelled seafood products.
origin and/or species of fishery products are increasingly required by governments to help regulate fisheries trade, and by larger buyers (such as retail supermarkets) of fishery products (see Box 5.4 and discussion of traceability in Chapter 4). The advantage of these simple identification-labelling efforts is that they can go ahead without having to wait for multilateral agreement on criteria for sustainability or consensus on how best to apply them.

Some industry groups and environmental NGOs have also worked to produce consumer guides to influence purchasing choices with respect to fishery products. In the fisheries sector, there is increasing use of consumer boycotts to pressure industry and government to improve management. Some citizens’ campaigns seek to reduce or eliminate consumption of particular overfished stocks or endangered species by calling on consumers, and sometimes restaurants and chefs, to boycott particular seafood products (Novaczek, 1998). The swordfish boycott by restaurants on the East Coast of the US is one example (Boston Globe, 1998).

In some countries that are heavily dependent on tourism, such as the islands of the Caribbean and Pacific, hotels and tour operators are also playing an important role in demanding higher standards for their tourism operations (A. Steven, pers. comm., 12 May 2006). Finally, several large wholesale and retail firms have made efforts to use their purchasing power in the seafood market to influence the sustainability of the fisheries sector (Roheim and Sutinen, 2006) (see Box 5.4).

5.3 Policy debates, tensions and challenges

Proponents of ecolabelling schemes cite a series of economic and environmental opportunities and benefits, while critics raise concerns about the bureaucratic and technical challenges as well as a fear of protectionism. This section begins with a review of the debate on the relationship between ecolabels and trade rules. It continues with a review of the debates about the pros and cons of ecolabelling using the framework of public policy objectives advanced in Chapter 1.

Trade rules and ecolabelling

International discussions of ecolabelling frequently include a debate on international trade rules. In particular, there is ongoing debate about how the WTO’s Agreement on Technical Barriers to Trade (TBT) applies to ecolabelling initiatives (see Chapter 4 for background on the TBT Agreement). While the WTO does not claim to be the appropriate forum to determine the general usefulness of ecolabelling schemes or appropriate criteria for assessing sustainability, its rules nonetheless have important bearings on certification schemes.

It is important to note that WTO rules only deal with government-instituted labelling schemes (and standards and technical regulations more generally). However, as outlined in Boxes 5.2 and 5.4, supermarkets, processors and tourism operators are playing an increasingly important role in providing and shaping the demand for ecolabelled fishery products. These schemes do not fall under the jurisdiction of the WTO and can thus not be challenged at the trade body as potential barriers to trade.

The TBT Agreement and ecolabelling

Voluntary ecolabelling schemes for fishery 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 US import restrictions on tuna caught in association with dolphin to be GATT-illegal, it accepted the US voluntary ‘dolphin-safe’ tuna labelling scheme. The panel noted that the voluntary label did not illegally restrict the sale of tuna since the label could be freely sold with or without the ‘dolphin-safe’ label. Further, 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).
The TBT Agreement and PPMs

A further 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 also on the basis of how the product was produced (so-called 'process and production methods' or 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 such that the product itself may pollute or degrade the environment when it is consumed, used or disposed (such as requiring recycled materials to be used in a product). These are known as product-related PPMs. Alternatively, a process or method itself can have a negative impact on the environment through, for example, the manner in which natural resources are harvested or extracted in the production phase. These are non-product-related PPMs (WTO, 1998). These production externalities do not affect the product characteristics.

While the WTO upholds 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, the power of governments to make distinctions based on PPMs which are not manifested in the physical characteristics of the product is contested. A key issue here is whether and on what grounds governments can legitimately distinguish and discriminate between 'like products'. 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, are inconsistent with the GATT. Both the ruling and different interpretations of it remain, however, the subject of strong debate among international legal scholars - with some arguing that a distinction based on non-product-related PPMs is indeed GATT-compatible (Cosbey, 2001; Howse and Regan, 2003).

The position of the TBT Agreement on PPMs is of particular relevance to the case of ecolabelling for fishery products. In the environmental arena, PPM-based standards and regulations are becoming increasingly important for effective management. 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. PPM-related regulations and measures are thus likely to be essential for controlling the environmental impact of consumption decisions. Similarly, ecolabels in the fisheries sector are likely to be predominantly awarded based on non-product-related PPM criteria, particularly those related to harvesting methods including gear type, by-catch levels, marine habitat impacts, management system compliance and stock health. In addition, criteria for ecolabels are likely to be based on life-cycle analysis, whereby sustainability assessments consider all phases of a product - production, processing, use and disposal.

The applicability of the provisions of the TBT Agreement to either mandatory or voluntary ecolabelling schemes based on non-product-related PPMs is at best ambiguous and continues to be hotly debated. There is broad agreement that transparency is pivotal in avoiding potential trade difficulties and increasing the legitimacy and development of labelling programs. In the WTO’s Committee on Trade and Environment (CTE), governments have recognised that standards dealing with 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 arbitrary rationales that could undercut the principle of comparative advantage (for instance, regulations prohibiting products produced by workers earning less than a certain minimum wage), and well-intended but parochial understandings of sustainability 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 importers will be able to impose unfair economic pressure on less developed exporters to match domestic environmental standards or lose market
access. There are also concerns that non-product-related PPM-based regulations might compel producers to use less efficient or costly technologies/methodologies, and/or restrict foreign suppliers’ choice of technology. Another cost consideration is that while conformity with product characteristic-based standards can be assessed in either the producing country or the importing country, PPM-based requirements can be evaluated only on the production site. Finally, developing countries raise concerns that broadening the GATT to permit distinctions based on environmental PPMs could cause discrimination between products based on social PPM considerations (such as labour standards and human rights) that might have significant trade ramifications.

**Relevant international processes**

The FAO’s Sub-committee on Fish Trade is the key international forum for discussion of guidelines and technical aspects related to the ecolabelling for fishery products. Ecolabelling also remains a standing item of the agenda for the WTO Committee on Trade and Environment and is often discussed in the context of the WTO’s Agreement on Technical Barriers to Trade. The ISO Sub-Committee on Environmental Labelling is developing standards for the design and implementation of different types of ecolabelling programs. Finally, several RFMOs use or are elaborating schemes to identify the origin of fishery products and to reduce illegal fishing that undermines national or international management efforts (see Chapter 8).

**Policy objective: Profitability and export revenue**

For those producers able to meet sustainability requirements, ecolabelling presents an opportunity to value existing products, expand reach in existing markets, and/or maintain market share in a competitive environment. Indeed, in OECD markets, a green image has become a key strategy used in many industries to differentiate products with an eye to increasing profit or market share. While there will continue to be large markets for non-labelled fishery products, ecolabelled products could capture significant shares of the most profitable markets during the coming decades (O’Sullivan, 2005).

Ecolabelling schemes may also help retailers and processors to sustain demand for fish and fishery products. Some companies have expressed fears that growing public concerns about over-exploitation of marine fish stocks, environmental problems associated with aquaculture, animal rights and the contamination of fish may combine to impact the long-term demand for fish and fishery products. The adoption of ecolabelling schemes for fish and fishery products is one option some industries hope to use to improve public relations and address some concerns among environmentally-conscious consumers in markets such as the US, Germany, the UK and Scandinavia.

On the other hand, some governments and industry groups in countries with strong fish export interests but low capacities to meet or afford foreign labelling and certification standards fear that these standards simply disguise underlying intentions to protect domestic industries and restrict market access. They express concerns that ecolabelling schemes in importing countries could add a new layer of constraints upon their competitiveness by adding to existing food safety, fish health and technical standards rules (Kurien, 2000). The extent to which voluntary certification and labelling will be or could be used as a barrier to trade will ultimately depend on the demand for ecolabelled products in different markets (Ahmed, 2006). To date, there is neither clear evidence nor comprehensive study of how large environmental and social markets for fishery products are likely to become (Bostock, 2004). The influence of the voluntary purchasing decisions of large wholesale, retail and restaurant chains that control market shares in consuming and importing regions, particularly in Europe and North America, suggests that some schemes could effectively increase the scope and demand of ecolabelled products.
Possible discriminatory effects of domestic and foreign ecolabelling schemes can be attributed to a number of factors. Ecolabelling 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. The definition of product categories and the determination of criteria and limit values may favour domestic over foreign producers. Ecolabelling may require foreign producers to meet criteria which are not relevant in the country of production. Environmental infrastructures may differ widely across countries, and 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 (Deere, 2000; Roheim et al., 2001).

A final consideration in determining the potential profitability of labelled products is the extent to which ecolabelled products could gain market share. Data concerning the market impact of ecolabelled products are very difficult to obtain and it seems that this impact depends very much on the particular product. In some markets, such as that for household cleaning products, ecolabels have established a track record of promoting the spread of more environmentally-friendly production processes and product characteristics as well as raising consumer awareness about environmental issues (OECD, 1997b). So far, results for natural resource-based products such as organic and forestry products are more limited because ecolabelling schemes apply to only a very small share of production. The market for ecolabelled organic products in Europe and North America, for example, is said to be expanding more rapidly than supplies, and average prices are significantly higher than for 'non-organic' products (OECD, 1997b).

In the fisheries sector, most ecolabelling schemes are too young to provide clear data and ecolabelled products do not yet have a strong share of the market. There are, however, strong indicators of potential benefits for industries participating in ecolabelling schemes - not so much from present sales or market share, but from future growth. As noted above, some key developed country companies (Wal-Mart, Unilever) have announced their intentions to buy only certified fish in the future, and other large-scale wholesalers and retailers could follow suit (O'Sullivan, 2005; Roheim and Sutinen, 2006). In both developed and developing countries, fisheries producers are also working to comply with broad trends in environmental standards, such as ISO 14 000, in order to become more competitive in international markets.

The success of certification and ecolabelling schemes depends on consumers’ understanding and acceptance of certification and responsiveness to ecolabels. The need for accurate and informative claims is equally great whether the purchaser of the fishery products is a major institutional buyer, a national or local government or an individual consumer. In this regard, the credibility of labels has the potential to emerge as a key challenge to the success of the labelling scheme. Elaborating different fishery or country-specific ecolabelling schemes with variable standards designed to fit the requirements of particular communities may jeopardise the credibility of labelling schemes and confuse conservation-oriented consumers.

**Policy objective: Resource sustainability and environmental protection**

While the number of fisheries labelling schemes has grown in recent years, there is as yet little data regarding either the market share of ecolabelled fishery products or the impact of these ecolabels on environmental and fisheries management performance (Roheim and Sutinen, 2006). The premise of ecolabelling programs is that they will produce environmental improvements. By encouraging consumers to express environmental/ecological concerns through their purchasing behaviour, ecolabelling programs may provide economic incentives for better long-term stewardship. Consumer power can translate into
greater industry support for improved fisheries management, reduced regulatory violations and sustained productivity of fisheries resources. Ecolabels can also raise public awareness. Greater information about the environmental impact of products enables informed purchasing behaviour by consumers and intermediaries. Stronger public awareness can bolster political support and pressure governments to improve environmental management performance and to fulfil commitments made under international agreements. Consumer organisations and some international consumer unions argue that consumers have a right to product information relevant to their values and preferences, especially information pertaining to product safety or impacts on health or the environment.

From an environmental and sustainability perspective, it is important to note several complications with ecolabelling. First, achieving and identifying 'sustainability' in fisheries is a complex process. In devising sustainability criteria for ecolabelling, a key challenge is how to elaborate general criteria that are also applicable to specific regions, countries and fisheries. Some schemes focus on ensuring that a management system or process is 'sustainable', while others focus on the performance or outcome of the management system. Schemes that set standards for process or systems without prescribing sustainable outcomes are not necessarily comparable to schemes that seek to grade performance or ensure sustainable production. A related issue is how to maintain sustainable results. On the implementation side, for example, monitoring and data collection pose significant problems in many countries, in particular with respect to traceability - that is, the efforts to trace the origins of fish and fishery products.

A second challenge is that of averting the possible development of a bifurcated international market for fishery products: one in the North for sustainably-produced products, and another in the South where sustainability concerns are overlooked (FAO, 1998c; Mattoo and Singh, 1994; Roheim, 2004).

A third challenge is ensuring sustained consumer confidence and interest in ecolabels and other market-based initiatives. The acceptance and credibility of standards is closely related to how the standards were developed, the standards themselves and the accrediting or certifying process by which organisations are evaluated. Beyond the challenges of agreeing on relevant criteria, labelling schemes may also have disparate objectives and outcomes. For example, a standard indicating that a management system for sustainable fisheries is in place is not the same as certifying that a given consignment of fishery products was sustainably produced, but both may appear on labels.

**Policy objective: Social development, employment and food security**

Many producers - in both developed and developing countries - express concern about the costs of bringing fisheries management practices into compliance with the criteria of voluntary or mandatory ecolabelling schemes, the certification process and maintaining certifiable status. The burden of complying with foreign product standards may fall disproportionately on small suppliers for whom the cost of acquiring information about, and achieving, certifiable status and standards is relatively high. There are particular concerns about the feasibility for developing country producers to participate in labelling schemes.

Difficulties faced by small producers include obtaining adequate supplies of materials and environmentally-friendly technologies which are acceptable for use in, or necessary to comply with, standards for ecolabelled products. Other possible institutional constraints include inadequate and unequal financial and technical capacity within domestic regulatory agencies to facilitate sustainable fisheries management and monitoring sustainability criteria (Wessells et al., 2001). Quantity and quality of fisheries data is often low in developing countries, constraining possibilities for certification. Without the support of governments, many
private industries can not reasonably be expected to become sufficiently organised or have sufficient access to credit or expertise to independently institute effective management schemes and achieve certifiable status. In cases where governments fail to manage fisheries, the industry may be penalised due to lower sales prices in the absence of certification.

Many developing countries have emphasised their need for greater financial and technical assistance to improve management systems and some producers have requested assistance to be able to participate in ecolabelling schemes. Indeed, in some instances, ecolabelling programs may provide a source of financial and technical assistance to achieve greater value from available fisheries resources. Conceivably, ecolabelling schemes could comprise specific support programs 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.

There are also hopes that ecolabelling could provide new opportunities for attracting capital investment and joint ventures in developing countries. Some developing countries hope to meet certification criteria through co-operation among several countries in their region or through joint ventures with fishing enterprises from industrial countries. In addition, some entrepreneurs in developing countries hope to carve out a distinct market niche for sustainable artisanal modes of fish harvesting (Chaytor, 1999).

The challenge of attaining sustainability and concomitant certification labels is not unique to developing countries. Many fisheries in developed countries are depleted and unlikely to achieve certification in the near future. In developing countries, fisheries that are less developed or depleted might more easily achieve certification. Therefore, in terms of the state of a fish stock, some certification programs may in fact favour fisheries in developing countries over those in some developed countries.
6 SUBSIDIES

6.1 The policy issue

Government subsidies to the fishing industry have been conservatively estimated at US$ 15 billion, a sum equivalent to 20 percent of industry revenue (Milazzo, 1998). The vast majority of these subsidies are provided by rich countries, with seven major developed countries accounting for more than 90 percent of all officially reported fisheries subsidies in 1996.

In recent years, the international community has recognised the urgency to address the negative impacts of fisheries subsidies, noting that they are one of the factors driving unsustainable exploitation rates. Beyond the environmental concerns of fisheries subsidies, many governments are equally concerned about their impacts on international trade. Critics argue that subsidies contradict efforts to liberalise trade and undermine development potential that can be unleashed by properly-managed fisheries. Despite these concerns, it has also been widely recognised that some subsidies have been and continue to remain important to achieving public policy objectives (WTO, 2006b). They are used to help industries grow and to achieve social and environmental objectives.

The WTO Agreement on Subsidies and Countervailing Measures (ASCM) sets out rules that regulate those subsidies that are deemed illegal under international trade law. A few unique characteristics of fisheries subsidies, however, have managed to put them on the periphery of ASCM rules. Recognising this shortcoming, as well as the negative impacts that fisheries subsidies can have on trade and on the environment, WTO Members at the Doha Ministerial Conference in 2001 agreed to "clarify and improve WTO disciplines on fisheries subsidies, taking into account the importance of this sector to developing countries... With a view to enhancing the mutual supportiveness of trade and environment" (paragraphs 28 and 31 of the Doha Mandate, WTO 2001b).

International support for this mandate was underscored at the 2002 World Summit on Sustainable Development in Johannesburg where governments called for the elimination of subsidies that contribute to illegal, unreported and unregulated fishing and to over-capacity (Article 30(f), Plan of Implementation).

This chapter begins with background on subsidies, highlights some key trends in subsidies to the fisheries sector in light of WTO negotiations on fisheries subsidies and offers an analysis of how fisheries subsidies impact trade, environmental and socio-economic objectives.

6.2 Background and relevant facts

Subsidies have long been an important government policy tool and have been applied to support a variety of objectives including: to stimulate exports for a product that might otherwise struggle on the international market, to stimulate investment in research and development, to support infant industry development, to promote employment, to protect vulnerable social or economic groups, to support compliance with environmental regulations, or to ensure a supply of low-cost production inputs (van Beers and de Moor, 2001; WTO, 2006b). Subsidies can be offered in many different forms including cash handouts, support to offset capital costs/investments, below-cost public provision of goods and services, financial transfers, price supports and export subsidies.

While subsidies may cause less price distortion on the domestic market than do tariffs and other forms of support, they have several shortcomings. First, they require either government spending from the national budget or forgone revenue - which means they are often
not a viable option for developing countries. Second, there are dangers of cronyism, collusion and ties between government officials and managers. There is also a risk that supported industries or firms will not successfully integrate in the world market, and that they will remain dependent upon government support. Subsidies are also criticised for their distortionary impact on international trade flows (van Beers and van de Moor, 2001).

In the fisheries sector, subsidies have been, and continue to be, applied in a number of ways and for a number of different objectives (see, for example, Clark et al., 2005). Some of these subsidies, such as direct support for vessel building, have played an important role in developing the global fishing industry. However, many argue that they are harmful to trade, environmental and socio-economic objectives. There is evidence that they can cause market distortions and encourage overcapacity and overfishing that deplete stocks (see, for instance, UNEP, 2004). On the other hand, subsidies to resource management or capacity reduction programs might have positive effects on the health of fish stocks and on trade. Support for monitoring, control and surveillance activity can improve data and reduce illegal fishing, activities that might even eventually increase the market price for fish. Still other subsidies are designed to assist small-scale and artisanal fishing communities; their application reflects government desires to address socio-economic concerns. Table 6.1 offers a non-exhaustive list of subsidies and examples of the goods and services that they help to provide, each of which, when applied, has the potential to impact economic, environmental and socio-economic policy objectives.

Despite the general agreement that certain aspects of fisheries subsidies programs need to be reformed and clarified, there is very little data available on fisheries subsidy programs (WTO, 2006b). Developed country subsidy programs are complex and often linked to general subsidy programs; reporting has been vague and incomplete. Available data on fisheries subsidies in OECD and APEC countries give a general notion of how much support different fleets receive from their governments and which categories of current subsidies might be considered harmful or beneficial in trade, environmental and socio-economic terms. There are, however, several shortcomings with these data. First, they are

<table>
<thead>
<tr>
<th>Type of subsidy</th>
<th>Good or service provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants/loans/guarantee</td>
<td>• building fishing vessels</td>
</tr>
<tr>
<td></td>
<td>• purchasing fishing gear</td>
</tr>
<tr>
<td></td>
<td>• repairing fishing gear</td>
</tr>
<tr>
<td></td>
<td>• vessel decommissioning programs</td>
</tr>
<tr>
<td></td>
<td>• rural fisheries centres</td>
</tr>
<tr>
<td>Direct payments</td>
<td>• price supports/guarantees</td>
</tr>
<tr>
<td></td>
<td>• wage supports for fishermen</td>
</tr>
<tr>
<td></td>
<td>• fishing access fees to foreign waters</td>
</tr>
<tr>
<td></td>
<td>• worker retraining programs</td>
</tr>
<tr>
<td>Provision of goods at below-market rate</td>
<td>• insurance</td>
</tr>
<tr>
<td></td>
<td>• fishing gear</td>
</tr>
<tr>
<td></td>
<td>• safety equipment (i.e. flares and lifejackets)</td>
</tr>
<tr>
<td></td>
<td>• ice</td>
</tr>
<tr>
<td>Tax free or import duty reductions</td>
<td>• fuel</td>
</tr>
<tr>
<td></td>
<td>• fishing gear</td>
</tr>
<tr>
<td></td>
<td>• bait</td>
</tr>
</tbody>
</table>

Table 6.1: Sample subsidy types and the goods and services they provide
nearly ten years old and it is difficult to know how much the subsidy quantities or types have changed during this time period. Second, although data have been disaggregated by country, they are not disaggregated by fleet or by fishing region so it is difficult to know which fisheries and fishers are most affected by the subsidies. Finally, discrepancies among subsidy programs reported to the OECD, APEC and the WTO indicate that there are severe gaps in reporting. Further compounding data analysis difficulties, the various organisations compiling subsidies data for the fisheries sector rely on different definitions of subsidies. Nonetheless, the OECD, APEC and the WTO have compiled comparative data. Table 6.2 provides a sense of the extent to which key fishing nations support their industries.

For developing countries, very little, if any, quantitative data exists on subsidy programs, much less their impacts on trade, sustainability or socio-economic objectives. Qualitative data suggest that developing countries do offer support for small-scale and industrial fishers and for distant water fleets active in their waters. Many developing countries are interested in using subsidies to develop their own industrial fleets (personal communications, developing country trade officials, October and November, 2005).

Table 6.2: Overall subsidy values offered by some key fishing nations

<table>
<thead>
<tr>
<th>Country</th>
<th>1997 Fisheries subsidies estimates (Millions of USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>54.7</td>
</tr>
<tr>
<td>Chinese Taipei</td>
<td>187.7</td>
</tr>
<tr>
<td>European Union</td>
<td>800-1,019</td>
</tr>
<tr>
<td>Korea</td>
<td>324.5-335.7</td>
</tr>
<tr>
<td>Japan</td>
<td>2,924.8-2945.8</td>
</tr>
<tr>
<td>United States</td>
<td>867.9</td>
</tr>
</tbody>
</table>

Source: Adapted from Virdin (2001); WWF (1999)

The World Bank, the OECD and the FAO have attempted to define and quantify fisheries subsidies and establish their links to overcapacity and production distortions (see Table 6.3). The studies have become key analytical tools for identifying harmful subsidies and differentiating them from those that might be environmentally and developmentally beneficial without producing distortions.

One of the earliest attempts to estimate global fisheries support programs relied on the WTO definition of subsidies (see Table 6.3). It found that subsidies amounted to between US$ 14 and US$ 20 billion annually - these subsidies were estimated to cover between 30-35 percent of all fish production costs, ranking fishery products alongside beef products as the most highly subsidised food products in the world (Milazzo, 1998).

Since this initial work, a series of other international organisations have attempted to clarify the definition of fisheries subsidies, identify the extent of subsidies that fall under the current subsidy disciplines at the WTO and think more broadly about subsidies that do not neatly fit within the WTO definition. APEC and OECD studies highlighted, for example, that more than 75 percent of fisheries subsidies in developed countries is applied to infrastructure and management. The OECD study also noted the changing nature of fisheries subsidies; while in the past governments earmarked money for vessel building, today, subsidies are used to modernise and increase the efficiency of the boats in operation (Cox, 2000).

**Fisheries subsidy reform at the WTO**

Governments have committed to reducing fisheries subsidies at the WTO within the broader subsidy reforms initiated under the ASCM. Article 1 of the ASCM defines a subsidy as any "financial contribution" by a government that confers "benefit" to a "specific" domestic industry. "Financial contributions" are defined as direct payments, provision of goods or services, price supports or forgone government revenue otherwise due. These financial contributions
Table 6.3: Fisheries subsidies: categories and global estimates

<table>
<thead>
<tr>
<th>Institution</th>
<th>Global subsidy estimate</th>
<th>Subsidies definition and notes</th>
</tr>
</thead>
</table>
| APEC        | US$ 12.6 billion APEC member Countries | Subsidy definition: WTO ASCM  
Subsidy categories: Fisheries management and conservation, capital and infrastructure support programs; direct assistance to fishers and fish workers; lending support programs; tax preferences and insurance support programs; and marketing and price support programs  
Notes: More than 67 percent of subsidies contribute to decline of fish stocks. Capital and infrastructure subsidies to the capture fisheries sector significantly greater than any other subsidy type. |
Subsidy categories: Fisheries infrastructure, fisheries management including research enforcement and enhancement, fisherman’s income including employment insurance, government procured access to other countries’ waters, decommissioning of vessels and license retirement and tax exemptions  
Notes: 77 percent of transfers for fisheries infrastructure, management, research and enforcement. |
| WTO         | US$ 5.85 billion WTO Member Countries | Subsidy definition: WTO ASCM: Any “financial contribution” by a government that confers “benefit” to a “specific” domestic industry.  
Notes: Indications of significant notification shortcomings: in 1996, total notifications were US$ 5.85 billion for all Members combined; in 1997, the total was only US$ 82 billion. |
| UNEP        | N/A                     | Subsidy categories: Fisheries management services, capital costs including infrastructure, decommissioning and license requirements, subsidies to access foreign fisheries and subsidies to income. |
| FAO         | US$ 54 billion globally (annual deficit between fishing revenues and costs) | Subsidy definition: Government financial transfers that reduce costs or increase producer revenue in the short term, interventions with or without financial transfers that reduce costs or increase producer revenue in the short term, short-term benefits to producers that result from absence or lack of government intervention to correct distortions, and government interventions, or the absence of correcting interventions that affect costs and/or revenues of producing and marketing fish and fishery products in the short, medium or long term.  
Subsidy categories: Public market interventions, management and access right regimes, water and land use regimes for aquaculture, fish safety and hygiene regulations, capital markets and credit schemes, tax regulations, social security and labour policies, trade regulations. |

Sources: APEC (2000); FAO (1994); OECD (2003); Porter (2001); Virdin (2001); Westlund (2004).
are considered subsidies if they are provided by a government or a public or private entity on behalf of the government.

The ASCM provides a framework for defining, reporting and disciplining subsidies that create trade distortions, defined mainly in terms of export distortions. The current rules have several limitations from the perspective of the fisheries sector.

First, in the fisheries sector, subsidies distort production more directly than they distort trade. The ASCM’s current rules do not, however, adequately address subsidies that cause production distortions including even those which may have equally damaging long-term effects on trade. By limiting another producer’s capacity to access or produce the resource, subsidies can cause non-subsidised producers to expend more resources to harvest, or in cases of extreme over-exploitation when species either become commercially extinct or are closed by management regimes, they might limit non-subsidisers from producing at all (Schorr, 2004).

Second, the ASCM specifies that negative trade effects are to be assessed by examining indicators such as market share or prices in an export market. However, since fisheries subsidies first and foremost cause production distortions, the adverse effects of fisheries subsidies on a WTO Member based on these criteria would be difficult to demonstrate. Third, current ASCM rules eliminate the possibility of creating rules to pre-emptively control harmful harvest practices (that is, before such practices are put into effect).

Since their launch in 2001, the WTO negotiations on fisheries subsidies have come a long way - moving beyond the question of whether new rules will be formulated to how they will be framed. While originally brought to the table by a loosely defined group of countries known as the ‘Friends of Fish’ that includes Australia, Argentina, Chile, Ecuador, New Zealand, Philippines, Peru, Norway, Iceland and the United States, even countries which were initially reluctant to address the issue of new disciplines such as Japan, Korea and Chinese Taipei, have recognised the need to discipline fisheries subsidies. This agreement was strongly affirmed at the Hong Kong Ministerial Conference in December 2005, where governments noted that the WTO “should strengthen disciplines on subsidies in the fisheries sector, including through the prohibition of certain forms of fisheries subsidies that contribute to overcapacity and over-fishing..., taking into account the importance of this sector to development priorities, poverty reduction, and livelihood and food security concerns” (Paragraph 9, Annex D, Hong Kong Declaration; WTO, 2005b).

6.3 Policy debates, tensions and challenges

The WTO and negotiations on fisheries subsidies

Structure

At present, the ASCM uses a traffic light approach to distinguish three types of subsidies.

- The Red Box is comprised of prohibited subsidies that are banned outright. That is, subsidies designed to increase export performance or contingent upon the use of domestic goods are prohibited. A Member providing such a subsidy can be required to eliminate it.

- The Amber Box contains actionable subsidies that can be disciplined if they are shown to have ‘adverse effects’. All subsidies that are not prohibited automatically fall into the Amber Box. In this category, if a Member believes that it has suffered adverse effects from another Member’s subsidies, it can challenge a subsidy before a WTO dispute panel. The afflicted Member must prove harm caused by the subsidy. The Amber Box focuses on correcting the adverse effects of the subsidy rather than enforcing the rules of
the WTO. In fact, a Member may be able to maintain its subsidy even if it is proved guilty of causing adverse effects, as long as it removes the adverse effects to the complaining Member.

- **The Green Box**, which expired in 1999, contained permitted subsidies and included ‘non-specific’ subsidies and subsidies to research activities, disadvantaged regions and support to adapt new facilities to environmental regulations.

While Members agree that the ASCM should be used as a basis for the fisheries subsidies rules, defining red, amber and green fisheries subsidies has remained the most significant challenge to progress in the negotiations. The Friends of Fish argue for a ‘broad ban’ that would prohibit all subsidies to the fishing industry except for those that are clearly defined through the Green Box (such as those that might be applied for conservation schemes) or special and differential treatment. All other subsidies will automatically be assumed illegal. Supporters argue that the ‘broad-ban’ approach can most comprehensively target harmful subsidies and that exemptions can be designed specifically to achieve public policy objectives (Argentina, 2004; Brazil, 2006). Opponents argue that subsidies should not be prohibited just because of their existence, without any effect test (Japan et al., 2005). Further, they indicate that the approach lacks flexibility for future policy needs for developing and developed countries and that it nurtures a race for exceptions.

A ‘limited-prohibition’ approach allows all subsidies except those identified on an explicit list as either capacity- or effort-enhancing. Japan, Korea and Chinese Taipei are the main proponents of the ‘limited-prohibition’ approach, and more recently, the EU has suggested a similar structure (EC, 2006). Both argue that their approaches target the most important subsidies while keeping rules efficient and operational. Several proposals outline which subsidies are worthy of prohibition, including subsidies that contribute to construction of new vessels, overcapacity and IUU fishing, as well as those that should be explicitly permitted in the Green Box, such as those that have no adverse affects on resources (Japan et al., 2005; Japan, 2004b). Those concerned about the limited-prohibition approach indicate that it “contemplates a very small number of prohibited subsidies and a large number of permitted subsidies” and that it “could potentially lead to a set of disciplines weaker than the current rules” (US, 2004).

**Definitions**

Defining the scope and breadth of harmful fisheries subsidies is a central aspect of the ongoing WTO negotiations. Defining subsidies and modalities too narrowly runs the risk of omitting subsidies that have negative impacts, while a definition that is too broad may make illegal subsidies that might be vital for assisting countries developing sustainable industries. A further risk is that excessively complex rules might compromise their effective implementation.

Some of the key issues include:

- **Distinguishing ‘general’ subsidies, which are permitted under the ASCM, from fisheries-specific subsidies that would be prohibited**: Subsidies to infrastructure, such as ports and harbours, that are essential to fishing operations but not used exclusively for the fishing industry, are difficult to categorise as ‘specific’ subsidies. This is despite the fact that some Members indicate that substantial portions of their fisheries budget supports infrastructure needs (Japan, 2004a). Industry-specific subsidies targeted by reform efforts include, for example, subsidies to boats. Debate over general versus specific subsidies raises concerns because more than 40 percent of the fisheries subsidies from developed countries is applied to infrastructure that supports fishing activities (OECD, 2000). There is concern that the negotiating mandate will not be met if subsidies that can be considered ‘general’ but that contribute to production distortions, such as infrastructure support, fall outside of the rules.
• Subsidies to downstream aspects of fisheries production: Subsidies to processing facilities for fishery products may have an indirect effect on fishing effort or capacity by reducing the costs and/or increasing the revenues associated with fishing, which would increase the incentive to fish (New Zealand, 2005). However, creating rules that encapsulate subsidies applied to the entire fisheries commodity chain is highly contentious. Subsidies to downstream industries do not directly contribute to overfishing, and incorporating them into new rules could make the rules too complex, impeding their effectiveness. On the other hand, leaving them untreated offers opportunities for subsidisers to circumvent the rules.

• Fisheries access arrangements: It remains unclear which aspect (if any) of access arrangements between a distant water fishing nation, its fleet and the state providing access to its national waters should be classified as a subsidy. As the details of access agreements are largely opaque, WTO Members and outside policy bodies have been working to better understand their content, their impacts on resource health and the extent to which, if at all, they contribute to production distortions. These issues are thoroughly addressed in Chapter 7.

• Subsidies to national management plans. The OECD estimated that developed country governments contributed more than US$ 2.4 billion on activities such as research and enforcement that contribute to management (OECD, 2000). Management and research activities that govern the industry are indeed supported by the government and there is some question as to whether they should be disciplined as subsidies. Some governments as well as intergovernmental organisations stress that not all subsidies are harmful; subsidies to management might be one such category that should be exempted from WTO rules. Those more sceptical argue that any exemptions that allow subsidies should be accompanied by conditionality that will ensure that management plans are effective at maintaining the integrity of fish populations.

• Subsidies for buybacks: Subsidies have also been provided for various decommissioning schemes (or ‘buybacks’) aimed at removing overcapacity in a particular fishery, for instance by providing government payments to vessel owners for the permanent retirement of vessels or retirement of licences from a fishery (US, 2005). However, such subsidies have come under criticism from conservationists for being ineffective in the long run since the removed capacity tends to return or even increase (see e.g. Munro and Sumaila, 2004). To minimise these risks, it has been suggested that subsidies disciplines that allow for buybacks might need to attach certain conditions to their use to ensure that they meet their environmental objective.

Incorporating environmental issues into the WTO

Regardless of the approach to new rules on fisheries subsidies, making new rules operational will require that the WTO in some fashion addresses issues that arise at the frontier of the trade policy and environmental policy - an uncomfortable interface for the WTO. Fisheries subsidies have come to the attention of the WTO based on their ability to increase fishing capacity and fishing effort, effects that are not typically treated by the existing SCM, but that have important impacts on fish stocks. The challenge for the WTO in the fisheries subsidies negotiations is creating effective rules that do not require that the institution itself make policy decisions on the condition of fisheries resources. The lack of fisheries science expertise makes it unreasonable to imagine that the WTO would, or should determine if a subsidy causes overcapacity (Grynberg, 2003). Furthermore, the WTO is a trade organisation, and Members generally agree that it should continue working within its competency.
Despite clarity on the trade focus of the WTO, fisheries subsidies require some attention to environmental issues, and several challenges ensue:

- **Accurate and comprehensive information on fisheries subsidies and fish stocks are lacking.** Lack of reliable data makes it difficult to clarify and target subsidies that impact fish stocks and cause production distortions.

- **There is no single international institution that manages and consolidates all of the different elements of fisheries data.** While many international and regional organisations are devoted to improving data collection and management efforts, information is likely to be inconsistent and difficult to analyse for equity and comparability across fisheries; an issue of critical importance when trying to attack the subsidy problem from the international level.

- **WTO Members might be hesitant to outsource expertise.** Some Members might be concerned that relying on outside organisations for expertise will erode the institutional integrity of the WTO or expand its jurisdiction beyond its remit.

- **Outside institutions such as RFMOs might not have the capacity, or the desire, to address subsidy and trade issues.**

**Development concerns: special and differential treatment**

The principle of SDT is that countries with different levels of economic development and different needs should have variable levels of obligations under WTO rules. These variable obligations should facilitate a transition into the multilateral trading system (Yu and Fonseca, 2005).

SDT is a key element of the fisheries subsidies negotiations and, unlike other negotiations, developing countries have stressed the need to negotiate SDT early and in parallel with the formation of the rules. Historically, SDT has been negotiated after rules have been formed. In particular, developing countries have identified their desire for SDT provisions that allow subsidies to artisanal fishers, access fees and broad fiscal incentives for fisheries-related development (Antigua and Barbuda et al., 2005; Brazil, 2006). The challenge here is clear. On the one hand, the subsidies negotiations are aimed at reducing subsidies that contribute to overcapacity. On the other hand, developing countries want to preserve policy space to increase their harvest capacity through the use of subsidies (of which developed countries have already taken advantage and can better afford).

To this end, some developing countries have submitted proposals that explore creative ways to ensure that SDT does not infringe on fisheries health. Examples include allowing subsidies in cases where fish stocks are not over-exploited or utilising RFMO membership as a criterion for qualifying for SDT. While there has been a varying degree of openness towards incorporating environmental criteria into SDT provisions, there are logistical challenges. First, tackling SDT and environmental implications of subsidies requires defining environmental criteria that the WTO sanctions as acceptable, taking the WTO into areas in which it is not technically competent. While outside agencies with appropriate expertise such as the FAO could be used to offer reference points, some argue that this will erode the institutional power of the WTO. Further, environmental and scientific data are particularly limited in developing countries, indicating that some countries that are intended to be beneficiaries of SDT might immediately fall outside of the scope of SDT.

**Transparency in reporting**

Article 25 of the ASCM requires that WTO Members report each of their subsidies. Compliance with this article has been characterised by a “great tardiness or complete lack of notifications from the majority of Members” (WTO, 2001a). Insufficient reporting is particularly relevant in the case of fisheries subsidies (Brazil et al., 2005). According to WWF estimates, it is likely that as many as 90 percent of fisheries...
subsidies is not properly notified to the WTO (WWF, 1999). Several WTO Members have also emphasised the challenges that emerge from lack of transparency with respect to the levels of fisheries subsidies (see e.g. Australia et al., 2002; Japan, 2002). However, transparency has been identified as one of the priorities in the fisheries subsidies negotiations.

Transparency in reporting on fisheries subsidies is essential to their effective reform at the WTO. Some Members argue that simple rules might in fact be more effective because notification will be more comprehensive. Bolder, more complex rules will translate into a more complex reporting process, potentially limiting the extent to which countries comply.

Again, the lack of fisheries-specific data and information on the end use of subsidies poses serious challenges to overcoming transparency shortcomings.

### Relevant international processes

The WTO is the key international forum charged with international negotiations on fisheries subsidies. As part of the Doha Round, governments commit to clarifying and improving WTO disciplines on fisheries subsidies. The WTO, the FAO, UNEP and the OECD are also actively involved at the inter-governmental level, particularly in the provision of technical advice and the generation of relevant research.

### Policy objective: Profitability and export revenue

Fisheries subsidies have a range of trade-related impacts. For recipients, subsidies can protect the viability, competitiveness and returns for key fishing industries. Specifically, they can help protect domestic industries from competition due to exports from cheaper foreign producers. For unsubsidised producers, however, subsidies to foreign producers can significantly limit their market access and thus the profitability of their industries. Of course, all of this is dependent upon access to fisheries resources, a factor that can also be subsidised through access payments. Some subsidies are applied directly to augment production and help to secure profits and encourage export growth, while other types of subsidies are targeted at increasing the efficiency and scale of fisheries production. For example, OECD and APEC studies reveal that developed countries in particular commonly offer subsidies for fisheries-related infrastructure, management and conservation efforts and fishing vessel modernisation. More recently, there has been interest in support mechanisms for compliance with international standards and fuel, two of the costs that have been rising substantially in recent years. In the past, subsidies were provided directly for vessel building and for fishing gear; however, these practices have been greatly reduced because of criticism of their environmental consequences.

By lowering the cost of production for subsidised producers, subsidies have enabled fishers to continue to increase fishing efforts despite the fact that without subsidies, their actions would not be economically feasible. Even where subsidies have beneficial economic effects for targeted companies or industries, they undermine the competitiveness of non-subsidised producers and can act as barriers to trade. As the majority of fisheries subsidies are offered in developed countries, they leave developing country producers at a further disadvantage when trying to expand their own fishing industries. Many developing countries lack the economic resources to support their domestic industries or to match the level of developed country subsidies, yet their producers are often faced with subsidised competition. Since developed countries were able to use subsidies to jumpstart their economies in the past, developing countries argue that it is only fair that they are afforded the same opportunities today. The viability of the fishing industry and economic objectives must be underscored by long-term resource sustainability.
Policy objective: Resource sustainability and environmental protection

Inappropriately designed subsidies to fishing industries - coupled with weak fisheries management systems - have been widely recognised as one of the key economic drivers of over-exploitation of fisheries resources by contributing to significant overcapacities of fishing fleets particularly in developed countries (UNEP, 2004). In addition to increasing total catch, large-scale industrial fleets have exacerbated secondary pressures on marine resources, such as increased levels of by-catch and the use of destructive fishing practices which harm non-target species and marine ecosystems. Such overcapacities and resulting fish stock decline are also thought to contribute to IUU fishing (Agnew and Barnes, 2004). As resource depletion advances in the national waters of major fishing nations, this can increase fishing pressures on the high seas or the waters of other coastal states.

Subsidies that have been identified as particularly or potentially environmentally problematic include subsidies to fisheries infrastructure, access to foreign waters, capital costs, variable costs and price support (UNEP, 2004). Other subsidies - such as for decommissioning of vessels and income support - have also been shown to have potentially harmful effects (UNEP, 2004). In addition, there is evidence that the impacts of subsidies can be related to the efficacy of fisheries management systems and the level of fishing capacity. If indeed subsidies can be equated with negative environmental consequences, it follows that subsidy cuts have the potential to reduce environmental damages.

On the other hand, fisheries subsidies can help to achieve sustainability objectives. Increased government support for fisheries management, monitoring and surveillance can play a key role in encouraging sustainability. Government support for vessel decommissioning and retirement schemes, although to be treated cautiously, are examples of efforts to create synergies between subsidies and resource sustainability. Experience has shown that while implemented with the best intentions, environmentally-friendly subsidies must be designed carefully to avoid adverse and unintended effects on resource health.

Policy objective: Social development, employment and food security

Fisheries subsidies are often applied to achieve socio-economic goals in developed and developing countries alike in large and small-scale fisheries. APEC and OECD accounts of subsidies identify direct assistance to fishermen and fish workers as an important category of subsidies, and one that Japan in particular has defended vigorously throughout the WTO fisheries subsidies negotiations. In developing countries, subsidies for fishing inputs such as bait, ice and safety equipment are often provided in fishing villages and communities. Further, support is often also provided for the development of rural fish markets, fish marketing and repair services for fisheries equipment. Additionally, developing countries often seek to attract foreign investment by offering investment incentives such as tax breaks and import duty exemptions; the hope is that such investment will create local jobs and 'knock-on' benefits that encourage socio-economic development. While subsidies might achieve domestic development objectives, they may also be associated with important social costs, including continued support of unsuccessful ventures when public funds could be better allocated to other aspects of public policy.

At the same time, by reducing the ability of developing countries to compete with subsidised fleets, subsidies can thwart developing countries’ efforts to develop their own industries and thereby capture more value from their EEZs (Schrank, 2003). Subsidies that support processing and canning industries in developed countries can also constrain opportunities for developing countries to generate employment and local development by diversifying their exports into value-added products.
Significantly, while fiscal constraints often limit the subsidies that developing countries can offer, developing countries have expressed a strong interest in preserving 'policy space' to develop their fishing industries in the future. In particular, developing countries emphasise the importance of maintaining the option to support artisanal and small-scale fishing operations. At present, some developing countries do provide tax incentives or fuel subsidies to their domestic fleets, but there is currently little data on the extent of subsidies for domestic development in developing countries. While there is widespread support for enabling developing countries to use subsidies where necessary for social development, the challenge will be to find ways to reconcile this objective with any potential negative environmental impacts that subsidies could cause.
7 FISHERIES ACCESS AGREEMENTS

7.1 The policy issue

Many countries lack the capital or the infrastructure to profitably access, process and distribute the fisheries resources within their territorial waters. Access agreements are contractual arrangements whereby foreign fleets, or their governments, pay countries for access to these territorial waters.

Since the establishment of the 200-mile exclusive economic zone by the 1982 UNCLOS, access agreements have become an increasingly important part of trade and development relations between developed and developing countries. In some countries, access agreements mean that fishing by foreign fleets far exceeds fishing by coastal states (WWF, 2005). While access agreements provide a valuable option for some countries to extract economic returns from their resources, there are a range of concerns about the equity of these arrangements and their impacts on artisanal, local fishers and national development. Fuelled in part by overcapacity in developed country fishing fleets, there is strong debate about the impact of access agreements on the environment and resource sustainability, particularly in developing countries with limited management capacity. As the WTO negotiates new rules to govern fisheries subsidies rules (see Chapter 6), there is also a growing debate about whether and in what ways access fees paid by governments of distant water fishing nations (DWFN) can be considered subsidies (particularly as DWFN governments tend only partially to recover those fees from beneficiaries in the domestic fishing industry).

7.2 Background and relevant facts

The international framework for access agreements is provided by UNCLOS. Article 62 of UNCLOS specifies that states must aim at "optimum utilisation" of the living resources of their EEZ: if a coastal state does not have the capacity to harvest its entire allowable catch, it must give other states access to the surplus. The coastal state has the discretion to make entry of foreign fishing fleets contingent on a number of conditions including adequate compensation, compliance with conservation and management measures, as well as with local fishing regulations and other conditions established by the coastal state. Moreover, Article 73 of UNCLOS provides the coastal state with strong enforcement powers to ensure that distant water fleets respect the coastal state’s conservation and management measures. These powers include the right of inspection, boarding, arrest and judicial proceedings.

What are access agreements?

There are several kinds of fisheries access agreements. The most straightforward form is a reciprocal agreement between neighbouring countries. The EU, for instance, has reciprocal agreements with several countries including Norway, Iceland and the Baltic States, under which the EU offers partners fishing opportunities in return for equivalent opportunities for EU vessels in neighbouring waters. Additionally, several Pacific Island states have agreed to open their EEZs to each other through a co-operative regional access agreement.

Access agreements involving fleets from DWFNs are usually more politically and economically complex. In general, these agreements involve the payment of fees from well-established DWFNs to developing countries in exchange for fishing rights or access licenses. Such exchanges come in two main forms:

- **Government-to-Government**: In government-to-government agreements, a DWFN government purchases fishing rights from coastal or island nations. Payments are usually made for a particular quantity of catch or for a period of time in which a DWFN has access. Both the United States and the European Union, for example, have...
access agreements with African, Caribbean and Pacific (ACP) countries. The terms of access agreements do not, however, specify how DWFNs will allocate access within their own fleets or who within the country will pay for this arrangement. In general, both the EU and the industry pay a fee to the host government (see ICTSD, 2006a).

- **Private-to-Government:** Some agreements are negotiated directly by the private sector with host governments. For instance, while Japan has an overall agreement with South Pacific nations, industry associations representing vessel operators negotiate directly with individual Pacific Island governments (Mbithi Mwikya, 2006). The access fee is paid by the Japanese company, negotiated via individual agreements, and calculated on a per-trip basis (Grynberg, 2003).

**Which countries are involved in access agreements?**

Since the first formal access agreement was established in 1979 (between the European Union and Senegal), a dense network of access agreements has emerged - covering fisheries all over the world (Mbithi Mwikya, 2006). The key DWFNs involved are the EU, the US, Korea, Russia, Chinese Taipei and Japan. For many years, data on the economic importance and magnitude of access agreements were not publicly available as many governments and regional fisheries organisations considered access agreements commercially sensitive. While the availability of public information on access agreements has subsequently increased, it remains limited.

At present, EU access agreements are the most transparent. As a result, much of the analysis of access agreements has focused on the EU experience and this chapter draws heavily on the EU example. In the late 1990s, EU payments for access to ACP countries accounted for one-third of the EU fisheries budget, or approximately US$ 130 million annually (see Table 7.1). Spain has been the dominant EU beneficiary, collecting 82 percent of the value arising from EU-ACP bilateral trade agreements. Access agreements have also been arranged between the European Union and Latin American countries such as Argentina (Johnstone, 1996; Mbithi Mwikya, 2006).

<table>
<thead>
<tr>
<th>Host country</th>
<th>EU payment (millions of euros)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritania</td>
<td>86</td>
</tr>
<tr>
<td>Senegal</td>
<td>16</td>
</tr>
<tr>
<td>Guinea</td>
<td>3.9</td>
</tr>
<tr>
<td>Seychelles</td>
<td>4.8</td>
</tr>
</tbody>
</table>

*Source: Gómez (2005)*

Beyond the EU, coastal states in West Africa have granted access to their fisheries through access agreements with China, Cuba, Libya, Palestine, Japan and South Korea (Acheampong, 1997). A number of states in the Caribbean and Central Western Pacific have also signed access agreements - mostly with Japan and the US. Indeed, since 1990, over 100 non-EU agreements have been garnered by coastal states around the world, approximately forty of which involve access for Japanese fleets (Dommen, 2000).

**7.3 Policy debates, tensions and challenges**

Access agreements, as well as efforts aimed at their reform, have become increasingly contentious for a range of political, economic, environmental and developmental reasons. This section begins with a review of discussion about the relationship between trade rules and access agreements and then highlights debates about access agreements that arise with respect to different policy objectives.
Access agreements and trade rules

Several leading environmental advocates have argued that certain access arrangements should be considered subsidies. While most (though not all) observers would agree that the payment from one government to another should not be regarded as a subsidy (but rather as a trade transaction, see Mbiti Mwikya, 2006), some argue that where the DWFN does not recover an ‘adequate’ level of fees from its fleet paid under government-to-government agreements, these agreements should be seen as subsidies that contribute directly to overcapacity and trade distortions by reducing the costs of production for recipient fleets (Schorr, 2004; Stone, 1997). For example, in EU access agreements with ACP countries, government transfers have been estimated to cover 83 percent of the total cost of access. Likewise, in arrangements with Pacific island countries, the United States government contributes an estimated 84 percent of the total payment (Acheampong, 1997; Grynberg, 2003). The ensuing debate on fisheries access arrangements at the WTO has focused on: (i) whether any part of an access arrangement constitutes a subsidy under the WTO’s technical definition of subsidies (and as such can be disciplined at the WTO); and (ii) whether new rules under negotiation at the WTO ought to explicitly include access arrangements within the definition of subsidies.

According to the current provisions of the WTO’s ASCM, a subsidy exists where there is:

- A financial contribution by a government or public body within the territory of a Member involving:
  - a direct transfer of funds (grants, loans or equity infusions);
  - potential direct transfer of funds or liabilities (loan guarantees);
  - forgone government revenues (fiscal incentives such as tax credits);
  - government-provided goods or services; or
  - government payments to a funding mechanisms or to carry out the above; or,
  - Income or price support in the sense of Article XVI of GATT1994; and,
  - A benefit conferred.

As noted in Chapter 6, the premise of ongoing fisheries subsidy negotiations at the WTO is that the ASCM needs to be clarified and improved in order to address subsidies that directly contribute to overcapacity and production distortions in the fisheries sector. Given the importance of access agreements to developing country economies, the challenge is whether any new rules that are applied to access agreements could balance the goal of maximising economic returns while eliminating any harmful environmental and trade effects. Developing countries, particularly those with large EEZs, argue that access agreements are essential to their economies and thus should remain legal at the WTO, at a minimum, through special and differential treatment clauses (Antigua and Barbuda et al., 2005). They are concerned that any rules on access arrangements could deter distant water fishing nations from entering into access agreements, with a resulting loss in revenue from the access fees. Also, there is the point that formal access agreements might simply be replaced by a greater number of less transparent, private agreements that may have less favourable terms for developing countries. Also, some argue that attempts to limit access agreements encroach upon the sovereign state’s right to ‘rent’ out their resources in accordance with UNCLOS. Moreover, many governments emphasise their need to use these resources as they see fit, to pursue national development goals. Critics, however, argue that such SDT will likely confer most benefit on the DWFN and further contribute to the decline of fish stocks.

Relevant international processes

The key processes for negotiation and reform of access agreements are at the bilateral and regional level. Developing countries are increasingly recognising the usefulness of adopting a regional approach to these negotiations. Following their joint negotiation with the US, the Pacific Island countries are currently working to form an alliance to jointly negotiate the terms of access with the EU in the context of their Economic Partnership Agreement (EPA).
At the multilateral level, the question of whether and how access agreements might be considered subsidies has arisen in the WTO’s ongoing negotiations to clarify and improve rules applicable to fisheries subsidies (see Chapter 6).

**Policy objective: Profitability and export revenue**

Economic considerations are the driving force behind access agreements both for DWFNs and host countries. The question is how access agreements can be fashioned to achieve the economic objectives of both parties involved.

For DWFNs, access agreements provide a range of economic benefits. First, they can directly maintain or increase their supply of raw fish material that will be used both for sale and for supplying domestic processing facilities such as canneries. Second, access agreements enable DWFNs to maintain their harvest capacity despite declining stocks, either by increasing effort or securing enough resources to sustain fleet size in domestic waters. Both of these strategies help to ensure that DWFNs can maintain employment security in both the fishing and processing sectors (IFREMER, 1999).

For host countries (usually developing countries), access agreements are a source of income and, in particular, foreign exchange. Access agreements can offer coastal states the opportunity to benefit from their resources without having to make high risk investments in the harvest end of the fishing commodity chain. For countries that lack the capacity to catch and process their fish, access agreements are the only means to take economic advantage of their resources. In the case of Kiribati and Tuvalu, for example, access fees represent more than 42 percent of GDP (Grynberg, 2003).

There is concern, however, that access payments do not represent the value of the catches, and that there are too few opportunities to add value to national fisheries resources at the local level (Mbithi Mwikya, 2006). The terms of the many access agreements, particularly those within the private sector, are highly confidential, limiting information on how much compensation countries receive relative to the value of the DWF fleet’s catch. The available evidence suggests that DWFNs generally pay fees that amount to between 3 and 17 percent of the value of their catch, with an average price of access of about 6 percent. Between 1993 and 1997, every Euro paid by the EU for agreements with developing countries generated an estimated EUR 3.1 in return. In that period, EU fisheries agreements generated 240,000MT of fish annually (with a value of EUR 485 million per year). In contrast, the EU public and private sector paid a combined EUR 187 million in access fees per year (IFREMER, 1999). In one such access agreement, the compensation Guinea-Bissau received for issuing licenses to French and Spanish fleets in 1996 was less than one percent of the estimated market value of the tuna harvested from its waters (Mbithi Mwikya, 2006). Kaczynski and Fluharty (2002) offer evidence that in the same country, under an access agreement, the EU manipulated its fleet size, harvested excessive by-catch, underpaid tuna license fees and did not provide the coastal state with timely statistical information. Alternatively, while it appears on the surface that host countries receive only a fraction of the value of fish caught in their EEZs, vessel operators argue that their share of revenue has also been dramatically reduced in recent years due to falling fish prices and exceptionally high fuel and operating costs.

Concern about the fairness of access agreements is compounded by several factors. First, in addition to the fact that DWFN governments often pay a portion of the access fee to support fishing activities, the fleets themselves are also often heavily subsidised (see Chapter 6). If indeed access payments by DWFN governments are subsidies, it is possible that access agreements do more to distort global productive opportunities than to encourage them. In addition, subsidised, high-capacity foreign fleets may threaten fisheries’ ecological sustainability and, by lowering operating costs...
for DWF vessel owners, make it difficult for host country fishers to compete.

Second, competition among host countries that share fish stocks of interest to DWF fleets can negatively impact the terms of access agreements, providing an opportunity for negotiators to play one country off against another. This is particularly true for poor countries that are highly dependent on access fees for their economic security. Without proper co-operation among developing coastal states, competition poses the risk of driving prices for access down, reducing benefits to the host governments and local communities. In the Pacific Islands, for example, many countries in geographic proximity have found themselves competing for access clients (Schurman, 1998). In response, these countries have worked to form regional alliances for collective negotiations (as discussed below).

Third, complications arise when access agreements are negotiated as just one part of larger bilateral trading arrangements. In some cases, access payments are intertwined with official development assistance. In the Western Central Pacific, for example, one-quarter of access fees comes from payments made by the United States Agency for International Development (USAID) under the terms of a fishing treaty between the US and the Pacific countries (Grynberg, 2003). While the fishing treaty between the two countries might or might not qualify as official development assistance, that access is tied to much-needed international aid which potentially influences negotiations. Furthermore, there is some evidence that official development assistance has been made contingent upon access (Grynberg, 2003; Petersen, 2003). Additionally, in these cases, international aid is also directly linked to fisheries projects that help to secure the presence and efficiency of the DWF fleet (Tarte, 1997). Negotiations, however, have indirect links with international aid, making it difficult to quantify the relationship between the two.

Importantly, several recent studies suggest that the costs that can accompany access agreements - in terms of income loss for local fishermen, environmental damage and the depletion of fish stock - can far outweigh the short-term financial gains generated from foreign government payments (UNEP, 2001; UNEP, 2002). In the case of Argentina, exports grew by 478 percent between 1985 and 1995 following the conclusion of access agreements with European and Southeast Asian fleets (Japan, Korea and others). But between 1995 and 1998, revenues then dropped as catch levels plummeted by 25 percent as a result of over-exploitation. The 1990 Argentina-EU agreement also set up joint-ventures with companies in receipt of EU subsidies. Local small-scale fishermen using traditional boats were found to be hurt by the influx of large factory-style vessels (which increased their capacity five-fold between 1990 and 1995). A UNEP report estimates that the cost to the economy of unsustainable fishing patterns of one species alone (hake) cost the Argentine economy US$ 500 million, but that a better managed fishery could benefit it by up to US$ 5 billion (UNEP, 2001).

DWFNs face increasing pressures to negotiate fairer and more sustainable fisheries access agreements. As one of the most important players in the access agreement matrix, the EU is in a unique position to increase the efficiency and benefit of access agreements. Whereas the EU has claimed in the past that its fisheries arrangements with developing countries were purely commercial in nature and had nothing to do with development or poverty reduction (Kaczynski, 2002), the Cotonou Agreement states that EU-ACP fisheries arrangements should be consistent with larger EU development strategies for fisheries. This treaty has helped to garner momentum for reforming fisheries access agreements as part of the reform of the Common Fisheries Policy in 2002. Indeed, in the EU, access agreements are the main source of fisheries support to ACP countries. In the last five years, 150 million euros has been designated to access agreements, while only EUR 30 million have been allocated to fisheries projects under EU development co-operation (Gorez, 2005).

In the EU, re-negotiations of access agreements tend to focus on license fees for access, but progressively, new agreements address financial
contributions to research, landings within the territory of the coastal state and catch limits. Access agreements also now allow joint ventures where financial compensation can include funding for fisheries research, training for fishery managers and grants to small-scale fishing (Kaczynski and Fluharty, 2002). The EU agreements are now also guided by sustainability principles, indicating that agreements should:

• be in line with the principle of ownership of the fishing policy by the coastal state and their rights to implement national and/or regional policy aiming to sustainably exploit their fishing resources, to increase local value-added and to obtain the fairest price for access rights to the resource they do not have the capacity to harvest;
• be based on sound scientific and technical advice;
• be coherent with EU objectives of avoiding over-exploitation of stocks; and
• assess the likely environmental impact of fishing, with a view to adopting the necessary remedial measures.

Furthermore, the EU’s new access agreements are designed to look more like partnerships, taking into account control, monitoring and surveillance weakness in developing countries, and providing legal and financial contributions to help host countries achieve management and development goals. Under these conditions, it is possible that access agreements could contribute to management and environmental improvements. In 2002, as part of the reform of its Common Fisheries Policy, the EU launched a process to negotiate so-called Fisheries Partnership Agreements (FPAs) with Angola, Mauritania, Morocco, Cape Verde, Gabon, Comoros and the Seychelles. The FPAs with Gabon, Comoros and Cape Verde all show some common features: a reduction in total payments; an increase in the financial participation of the EU’s fishing industry; a larger share of the total financial contribution earmarked for fisheries management or research activities; some features to contribute to the economic and social development of the host country’s fishing communities (e.g. local observers on boats, requirements to land a certain share of the catch in the host country). However, observers also point out that financial payments are still pegged to estimated catches, maintaining an incentive for host countries to set quota for foreign vessels above sustainable limits. The fact that total payments tend to be reduced has also been argued to reduce host countries’ capacity to put in place appropriate management systems and to develop their domestic fishing industries (ICTSD, 2006b).

In the South Pacific, the recent joint negotiation by Pacific Island states of an access agreement with the US through the Forum Fisheries Agency (FFA) highlights the potential for improvements in the nature of agreements. Regional co-operation was critical to this outcome. While the agreement does not address sustainability specifically in any detail, the negotiations led to improved arrangements for monitoring and surveillance, marine protected areas and more comprehensive reporting mechanisms. Separately, the FFA also facilitated the adoption of regional minimum terms and conditions of fisheries access, including the 1992 Niue Treaty on Co-operation in Fisheries Surveillance and Law Enforcement and the 1992 Palau Arrangement which jointly limit purse-seining in the region. The FFA has also improved local knowledge of fish stocks so that Pacific countries have the information they need to strengthen their hand in negotiating access agreements with more powerful fishing nations.

Policy objective: Resource sustainability and environmental protection

What are the effects of access agreements on fish stocks? Two core criticisms of access agreements are that they: (i) can exacerbate increases in fishing effort and overfishing; and (ii) that they do so in developing countries that have limited management schemes in place.
The structure of access agreements themselves has the potential to impact harvest in different ways. In all cases, catches and stock health are difficult to monitor, making it hard to understand the direct relationship between access agreements and environmental impacts, as well as the best ways to design and manage access agreements to achieve environmental sustainability. Most access agreements do not set catch limits or quotas, nor do they set limits on by-catch. Rather, access fees are determined through mechanisms such as gross registered tonnes (GRT) or numbers of boats, which do not provide precise estimates of fishing effort. These kinds of terms make it difficult to monitor or regulate the environmental impacts of access agreements. Access agreements that grant access for a given period of time without catch controls run the risk of high harvest rates. Alternatively, agreements where DWFNs pay according to how much they harvest offer incentives for underreporting. Where agreements limit only the number of boats, increases in technological efficiency on those boats can still lead to higher-than-expected catch rates. In EU-ACP agreements, for example, while there is a limit to the number of boats that can harvest tuna and small pelagics, there are no restrictions on how much each boat can harvest or on the capacity of boats. In the case of West Africa, EU-subsidised modernisation of vessels during the mid-1990s led fishing capacity to increase by 14 percent (Johnstone, 1996).

In addition, most agreements do not regulate the types of fishing practices that may be employed; as such, DWF fleets can, and do, employ destructive fishing practices, such as trawling or the use of FADs (fish aggregating devices) that attract high levels of by-catch and juveniles. In addition, fleet regulations are likely to be much less detailed for operators fishing through access agreements than they are for operators that would be fishing in their own waters. For example, demersal trawling in EU waters has to comply with restrictions on mesh size, netting material, twine diameter and extension length. In EU-ACP agreements, only mesh size is regulated. Other agreements have no regulations at all. Finally, access agreements have been provided for species already deemed fully-exploited and over-exploited, such as in the case of demersal species in Mauritania (Gorez, 2005). A related problem is that access agreements seldom recognise the existence of transboundary fish populations, ignoring the impact that harvest in one EEZ might have on the industry in another EEZ that relies on the same fish. Those sceptical about the long-term sustainability of access agreements express concern that they simply provide a mechanism to export the excess fishing capacity of developed countries to developing country waters.

Despite growing recognition of the environmental constraints of fisheries resources as well as the impacts that DWFNs can have on stocks in contracting coastal states, several challenges in achieving environmental sustainability ensue. For example, most developing countries lack sufficient funds and technical resources to adequately monitor and control implementation and enforcement of their fisheries policies and DWFN vessels. Even where management regimes are in place, many host countries often still have limited resources for monitoring and enforcement of agreements. A key concern is the accuracy of reporting, particularly where there are catch limits or reporting requirements in place. Recognising the severity of the problem of underreporting, the European Commission recently confirmed that monitoring vessel activity outside of EU waters must be improved and that there is a significant dearth of data on DWFN activities in third-party agreements. Some national experiences, however, indicate that access agreements are in fact helpful for enforcement as DWFNs that have paid for access have an interest in excluding and reporting illegal fishers. For example, in Morocco, there is evidence that stocks collapsed after the DWF fleets left, fishing was much less controlled and thus, the resource became over-exploited (Hachim El Ayoubi, pers. comm., 21 October 2005).

In joint recognition of increased pressures on fish stocks and the impacts on the longevity of the fishing industry, host countries as well as DWFNs acknowledge the importance of including terms and conditions regarding the
environment and fisheries management in access agreements. Indeed, some contracting parties have seen access agreements as an opportunity to apply funds to sustainability and management operations.

**Policy objective: Social development, employment and food security**

Access agreements have clear ties to social development objectives both in DWF and in host countries. In DWFNs, access agreements ensure that the socio-economic structure of the fishing industry is maintained, despite economic and environmental inefficiencies. For DWFNs, access agreements secure employment for the fishing industry as well as supply for processing industries.

In host countries, access agreements also have important impacts on social objectives, both positive and negative. By generating foreign exchange, access agreements can bolster the financial, and thus political, stability of governments and economies. Access agreements can also promote spill-over benefits in host countries by creating employment on foreign vessels or in related processing or supply industries. Finally, access agreements can generate revenues that can be applied to social and development objectives in general, or to those specific to the fishing industry. Access agreements can also promote spill-over benefits in host countries by creating employment on foreign vessels or in related processing or supply industries. Finally, access agreements can generate revenues that can be applied to social and development objectives in general, or to those specific to the fishing industry.

In practice, however, critics argue that payments to governments for access rights rarely reach the coastal communities that rely on fishery products for food and income (Mbithi Mwikya, 2006). Advocates argue that revenues from access fees should be applied to fisheries-related goals, particularly to address local development concerns in host countries, to promote domestic industry development and to bolster fisheries management.

Access agreements also have the potential to create destabilising social effects. Increased harvest rates, pressure on stocks and the high international value of species traditionally used at the local level can contribute to food security threats. Where stocks are overfished, this can limit the fish available both for export and local consumption. Additionally, as the export value of some fish species grows, they become too expensive for local consumers to buy. Some coastal countries have tried to avoid such problems by defining operational zones for domestic and foreign fleets (Mbithi Mwikya, 2006).

Moreover, stock depletion and competition for resources has sometimes led to conflict between DWF fleets and artisanal and small-scale fishers. Subsidised larger vessels sometimes out-compete small-scale and artisanal fishers, provoking some analysts to call for greater attention to the needs of local and artisanal fishers in host countries. Local benefits can be further limited when foreign fleets process catches in their home ports rather than using host country facilities. To address this issue, some access agreements have incorporated landing requirements in order to increase benefits to the host country. Such provisions are not, however, always effective. For example, an EU-Morocco agreement contained a provision that license fees for EU vessels could be reduced if EU vessels landed in Morocco. In a four-month period between December 1998 and March 1999, the EU vessels took advantage of the discounted licenses, but rather than utilising on-shore facilities, they were found to have unloaded and immediately reloaded their catches four times (Gorez, 2005).

Since destination markets for target species are mainly in developed countries, domestic fleets find themselves in a position to compete with the DWF fleet for customers. In this case, the DWF fleet has ‘home advantage’ not only in terms of market familiarity, but also in achieving quality standards such as complying with sanitary and phytosanitary measures (see Chapters 2 and 4). In some instances, host countries rely on access agreements, combined with preferential trading arrangements and harvest by foreign fleets as the only way to get their products into foreign markets (Johnstone, 1996).
8 TRADE MEASURES AND INTERNATIONAL ENVIRONMENTAL AND FISHERIES MANAGEMENT REGIMES

8.1 The policy issue

At the international level, a series of multilateral environmental and fisheries agreements, initiatives and organisations aim to help improve the incentives and obligations for more effective management of fisheries, related coastal environments and biodiversity. In some cases, trade-related policies are used as tools to support these management efforts.

While the use and effectiveness of such trade-related measures in advancing environmental ends has been widely debated, a growing number of fisheries and environmental agreements recognise that trade-related measures can be a valuable and sometimes necessary option for improving fisheries management. Several fish and marine species are now the object of multilateral environmental agreements (MEAs) and trade measures of regional fishery management organisations. As in the case of debates on standards and on ecolabelling, a core consideration is the distribution of the economic impacts of trade-related measures, particularly in terms of access to markets. This chapter reviews a sampling of the ways in which trade-related measures are applied to address particular management difficulties in the fisheries sector and the policy debates that arise. The chapter draws directly from Deere (2000).

8.2 Background and relevant facts

Broadly speaking, there are four categories of trade measures that are found in international environmental and fisheries agreements: trade bans, trade sanctions, export and/or import licensing procedures, notification requirements and packaging and labelling requirements (Roheim and Sutinen, 2006). Two additional sets of measures used by RFMOs that could be considered trade-related are vessel monitoring systems and vessel lists (Roheim and Sutinen, 2006) (see Box 8.2).

There are four core ‘environmental’ rationales for making use of trade-related environmental measures.

- To promote or compel compliance with environmental provisions included in MEAs or national regulations. A key rationale for the use of trade measures is their power as an enforcement mechanism. The logic behind these measures is not that the trade is the problem per se, 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 banned outright from the market or only allowed to enter when they meet a particular requirement or standard (OECD, 1997a). 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 (Vaughan and Dehlavi, 1998). 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.

- To restrict trade when trade flows themselves are considered major contributors to an environmental problem. Tools used to implement trade-related
environmental 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. In some instances, states use the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to restrict trade when the trade itself has been identified as a major threat to a species.

- To punish non-compliance. 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, 1997a). This approach is different to the temporary suspension of trading rights for particular products that is invoked in connection with non-compliance cases. 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 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 (Blackhurst, 1995).

- To promote public awareness. Trade measures are sometimes promoted as a way to raise public awareness. The underlying goal may be to sensitisie the public to the need to reduce unsustainable production and consumption patterns. The specific goal might be to raise public awareness about the relationship between consumer choices and particular environmental concerns (such as the conservation of dolphins) or simply to draw attention to a particular environmental threat (such as tropical forest degradation) (Downes and van Dyke, 1998; Pearson, 1998).

The following overview provides examples of some trade-related measures in international agreements relevant to fisheries, derived from Dommen (2000). It begins with a review of RFMOs and key trade measures in three RFMOs. It also reviews the case of the FAO’s International Plan of Action on IUU Fishing and CITES - one of the international environmental agreements that incorporates trade measures and is directly relevant to fisheries and related resources. The section concludes with a discussion of the relationship between MEAs and the WTO, and the impact of trade-related measures on trade, sustainability and social development objectives.

### Regional Fisheries Management Organisations

At the regional level, over 25 RFMOs have been established - either by fishing and coastal states or under the auspices of the FAO to assist in the implementation of its work (see Box 8.1). RFMOs cover approximately 66 species. Of the 204 shared fish stocks, only 32 percent are covered by RFMOs (Sumaila and Keith, 2006).

The FAO RFMOs’ mandates vary from that of an advisory role (e.g. the Western Central Atlantic Fishery Commission) to a management and regulatory role (e.g. the Indian Ocean Tuna Commission). RFMOs also differ according to their powers, budget and membership. Most RFMOs cover a specific geographical area or species, or both. There are, for instance, several bodies concerned with tuna and several concerned with fisheries in the Atlantic. Most RFMOs also have subsidiary scientific or technical committees, or ad hoc working groups. Conditions for membership in RFMOs vary from being open to states which may not even be fishing in the area, to imposing restrictions on membership.
**Box 8.1: Principal Regional Fisheries Management Organisations**

**FAO RFMOs:**
- Asia-Pacific Fishery Commission (APFIC, 1948)
- General Fisheries Commission for the Mediterranean (GFCM, 1949)
- European Inland Fisheries Advisory Commission (EIFAC, 1957)
- Indian Ocean Fishery Commission (IOFC, 1967)
- Fishery Committee for the Eastern Central Atlantic (CECAF, 1967)
- Committee for Inland Fisheries of Africa (CIFA, 1971)
- Western Central Atlantic Fishery Commission (WECAFC, 1973)
- Commission for Inland Fisheries of Latin America (COPESCAL, 1976)
- Indian Ocean Tuna Commission (IOTC, 1993)

**Principal non-FAO RFMOs:**
- International Council for the Exploration of the Sea (ICES, 1902, currently operates under the terms of its 1964 Convention)
- International Pacific Halibut Commission (IPHC, 1923)
- Inter-American Tropical Tuna Commission (IATTC, 1950)
- International Commission for Southeast Atlantic Fisheries (ICSAF, 1969)
- International Commission for the Conservation of Atlantic Tunas (ICCAT, 1969)
- International Baltic Sea Fishery Commission (IBSFC, 1973)
- Northwest Atlantic Fisheries Organization (NAFO, 1978, replaced ICNAF 1949)
- South Pacific Forum Fisheries Agency (FFA, 1979)
- North-East Atlantic Fisheries Commission (NEAFC, 1980, replaced the 'Permanent Commission', 1953)
- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR, 1982)
- North Atlantic Salmon Conservation Organization (NASCO, 1982)
- Latin American Organization for Fisheries Development (OLDEPESCA, 1982)
- Pacific Salmon Commission (PSC, 1985)
- North Atlantic Marine Mammal Commission (NAMMCO, 1992)
- North Pacific Anadromous Fish Commission (NPAFC 1992, replaced INPFC, 1955)
- North Pacific Marine Science Organization (PICES, 1992)
- Commission for the Conservation of Southern Bluefin Tuna (CCSBT, 1993)

For a description of the mandates, structures and operation of these organisations, see http://www.fao.org/fi/body/RFM/index.htm.
Several RFMOs have made important advances in fisheries management (Roheim and Sutinen, 2006). To improve monitoring, control of high seas and transboundary fisheries, and to reduce the size of fishing fleets, they have established lists of 'positive' (authorised to fish in the area of the RFMOs' jurisdiction) and 'negative' (unauthorised or 'non-co-operating') vessels (see Box 8.2). Some individual states and NGOs have also initiated lists of vessels reportedly engaged in unauthorised fishing. Some RFMOs have also encouraged their members to consider actions against non-members whose activities jeopardise the work of the organisation. The South Pacific Forum Fisheries Agency, for instance, is recognised as one of the more successful examples of international fisheries co-operation (Hyndman, 2004). The Northwest Atlantic Fisheries Organisation (NAFO), on the other hand, was much criticised in 1995 for having failed to prevent a severe conflict between Canada and Spanish vessels fishing for turbot near Canada’s Atlantic EEZ (Davies and Redgwell, 1996).

Despite these efforts, RFMOs differ greatly in their effectiveness (Roheim and Sutinen, 2006). The agreements that create RFMOs are among nations whose commercial fishers are primarily interested in maximising their harvest. 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 gathering adequate and accurate data from member states. 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. Many of the problems that confront regional organisations or arrangements arise from non-compliance of members themselves (Roheim and Sutinen, 2006; Swan, 2000). Weakness on the part of RFMOs has significant repercussions for the effectiveness of international environmental and fisheries agreements that are even more removed from the actual fisheries sustainable management objectives and which depend on the effectiveness of the RFMOs to meet their objectives. RFMOs have also been criticised for being non-transparent and offering limited opportunity for NGO participation (Hyvarinen et al., 1998).

**International Commission for the Conservation of Atlantic Tunas (ICCAT)**

ICCAT was the first RFMO to use certification to regulate trade in fish and fishery products. ICCAT’s objective is to maintain the populations of tuna and tuna-like fishes “at levels which will permit the maximum sustainable catch for food and other purposes”. In practice, ICCAT works to manage approximately 30 species of tunas and tuna-like species in the Atlantic Ocean and its adjacent seas (including the Caribbean and the Mediterranean). For the most vulnerable species, such as Atlantic bluefin tuna, ICCAT has adopted specific measures.

Atlantic bluefin tuna is fished well beyond sustainable levels - it attracts extremely high prices and strong demand, mainly from Japan, the highest consumer and importer of bluefin tuna. Since 1975, ICCAT has adopted regulatory measures specific to bluefin tuna and has taken a number of steps to help ensure implementation of these measures by non-contracting parties. Two specific trade-related measures have also been implemented:

1. **Establishment of a Bluefin Tuna Statistical Document Programme (BTSDP).** The BTSDP (which entered into force in 1993 for frozen bluefin tuna and in 1994 for fresh fish), requires that all parties ensure that imports of bluefin tuna into their territory be accompanied by a Bluefin Tuna Statistical Document. All bluefin products (from fishing entities, contracting Parties and non-contracting Parties, and not only from the Atlantic) must now be accompanied by a Statistical Document validated by a government official (ICCAT, 1998; ICCAT, 2000).
(ii) Implementation of trade restrictive measures further to the 1994 Bluefin Tuna Action Plan. Vessels flying the flags of Belize and Honduras (neither of which are Parties to ICCAT) as well as Panama (which is an ICCAT member) have been particularly persistent in fishing during the closed season, in closed areas, and in catching bluefin without a quota. After the failure of several efforts to improve compliance by these countries with ICCAT regulations, ICCAT members authorised Parties to impose trade restrictions against Belize, Honduras and Panama. These restrictions had the effect of prohibiting the import of Atlantic bluefin tuna and its products in any form since August 1997 for Belize and Honduras and from January 1998 for Panama. At the November 1999 ICCAT meeting in Rio, the trade restrictions against Panama were lifted, as Panama took a number of steps indicating its intention to co-operate with ICCAT. In addition to joining ICCAT in 1998, Panama inter alia cancelled the registrations of flag-of-convenience vessels and established a vessel licensing system (see also FAO, 2002).

Commission for the Conservation of Southern Bluefin Tuna (CCSBT)

In November 1999, CCSBT members approved the Southern Bluefin Tuna (SBT) Statistical Document Programme (also known as the Trade Information Scheme or TIS), according to which all SBT imported into the territory of a CCSBT member must be accompanied by a Statistical Document. This scheme, based on the ICCAT system, is designed to collect more accurate and comprehensive data on SBT fishing by monitoring SBT trade.

Southern bluefin tuna (SBT) has a valuable commercial industry based mainly on supplying the high-priced sashimi (raw fish) market in Japan where SBT can fetch up to US$ 1000/kg. SBT stocks are, however, severely depleted. The main nations which fish for SBT are Australia, Indonesia, Japan, New Zealand, South Korea and Chinese Taipei, and over 60 percent of SBT is destined for international trade. 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 agreed to the Convention for the Conservation of SBT (which created the CCSBT), the objective of which is "to ensure, through appropriate management, the conservation and optimum utilisation of SBT". The main management strategy adopted by the CCSBT is to set the total allowable catch (TAC) for the fishery and to allocate fishing quotas among nations. The Commission restricts fishing in breeding grounds and the taking of juvenile fish. The Commission also provides an internationally-recognised forum for other countries and entities to actively participate in SBT issues.

Increased fishing for SBT by non-members of the CCSBT is exacerbating the declining status of SBT. A number of fishing vessels flying flags-of-convenience also operate in the fishery. The CCSBT has been seeking co-operation from non-parties such as Chinese Taipei, Indonesia and South Korea. In the first six years of CCSBT’s existence, no additional fishing nations joined the CCSBT partly because the existing three members were unwilling to give up any of their fishing quota to new entrants. In 2001, however, the Republic of Korea joined the Commission. The Fishing Entity of Chinese Taipei also became a member in late 2002. Further, at its meeting in October 2003, the CCSBT agreed to invite countries with an interest in the fishery to participate in its activities as formal co-operating non-members. In 2004, the Philippines was accepted as a formal co-operating non-member and as such must now adhere to the management and conservation objectives of the CCSBT and agreed catch limits.

Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)

In 1999, in recognition of the problem of trade in unreported, illegally harvested Patagonian toothfish, the CCAMLR Parties agreed on a 'Catch Documentation Scheme' which aims to remove trade in illegally caught Patagonian toothfish and improve compliance with CCAMLR
Box 8.2: Vessel monitoring and lists as trade-related measures

Vessel monitoring systems

Since 1998, all vessels licensed to fish for toothfish in the CCAMLR region are required to carry a vessel monitoring system (VMS), which necessitates the use of a satellite-tracking device on board. This system is a means of monitoring and, ultimately, controlling trade. Similarly, the Inter-American Tropical Tuna Commission (IATTC) requires that each party with tuna-fishing vessels 24 metres or more in length establish a VMS by 1 January 2005, or as soon as possible thereafter. Countries which have already implemented VMS systems for selected categories of fishing vessels include Australia, New Zealand, the US, South Africa, Japan and Canada. The EU has recently required most of its vessels over 24 metres in length to be included in a VMS program and several developing countries are implementing or are close to implementing VMS including Morocco, Argentina, Panama, China and Peru.

Vessel lists

ICCAT developed two ‘lists’ of vessels over 24 metres in length. The first list was the ‘negative list’, which identifies and names the vessels engaged in IUU fishing such that those prohibitions on landings and transshipment discussed above could take place as well as a move to embargo purchases of tuna from those vessels. Since most of the product from those vessels is sold in Japan, co-operation from Japan is vital to the operation. However, problems with the negative list approach (whereby vessels fishing under a flag of convenience simply changed names) prompted a shift to a ‘positive list’ for those large-scale tuna longline vessels (LSTLVs) not engaged in IUU fishing. As of 2003, Japan only purchases tuna from those LSTLVs on the positive list. CCAMLR has also developed a ‘list’ of documented illegal toothfish fishing vessels - a ‘blacklist.’ To an extent, one can also consider CCAMLR’s catch documentation scheme as generating a ‘positive list,’ in that only those on the ‘list’ with the documentation can sell the fish, and those not on the list cannot (LeGallic, 2004). As noted by Agnew and Barnes (2004), such IUU lists, when combined with trade-related sanctions, provide the potential to significantly strengthen the disincentives to participate in IUU fishing and trade practices. According to the Marine Resources Assessment Group, the amount of unregulated fishing for tuna in the Atlantic ‘declined considerably’ following trade-related sanctions and the introduction of an IUU fishing list by ICCAT.

Source: Roheim and Sutinen (2006)

rules. According to the scheme, all landings, transhipments and importations of toothfish into the territories of contracting Parties must be accompanied by a Catch Document containing information relating to the volume and location of catch, and the name and flag state of the vessel. The Catch Documentation Scheme is designed to enable monitoring of international trade in toothfish; identification of the origins of toothfish imported into or exported from the territories of contracting Parties; and determination of whether these were caught in a manner consistent with CCAMLR conservation measures. The scheme also facilitates collection of catch data for the scientific evaluation of the stocks. The Catch Document scheme also permits any non-contracting Party to participate (by avoiding discrimination between products on the basis of CCAMLR membership, the contracting Parties avoid potential conflicts with WTO requirements).

CCAMLR faces a similar documentation and trade control challenge as CCSBT, but its task is made more difficult by the fact that the territory governed by CCAMLR is not the same
as the range of the two species of toothfish which its documentation scheme seeks to manage. Thus, whilst the scheme is mandatory on catch by members within the CCAMLR zone, its success depends on the extent to which the scheme is taken up outside the CCAMLR zone. In practice, the CCAMLR region continues to face significant problems with IUU fishing, vessels flying flags of convenience, and the failure of some CCAMLR members to regulate their own fishing fleets properly.

**FAO International Plan of Action on IUU Fishing**

While not an RFMO, a fisheries agreement, or legally binding, the 2001 FAO International Plan of Action (IPOA) provides detailed guidance for taking trade and trade-related measures in relation to port states and to internationally-agreed market measures. Article 56 provides that, where a port state has clear evidence that a vessel seeking access to its ports has been engaged in IUU fishing, the state should not allow the vessel to land or transship fish in its ports. Article 63 stipulates that port state measures may include prohibiting landings and transshipments unless the vessel can establish that the catch was taken in a manner consistent with the conservation and management measures of the applicable RFMO.

Article 66 provides that states should take all steps consistent with international law to prevent fish caught by vessels identified by RFMOs as engaging in IUU fishing from being traded or imported into their territories. RFMOs should identify these vessels through “agreed procedures in a fair, transparent and non-discriminatory manner”. This Article goes on to state that trade-related measures should only be used in exceptional circumstances or where other measures have proven unsuccessful and only after prior consultation with interested states. Furthermore, unilateral trade-related measures are to be avoided.

The IPOA provides for the adoption of multilaterally agreed catch documentation and certification, as well as other multilaterally agreed import and export controls or prohibitions, which may supplement trade bans and/or trade-related measures to reduce or eliminate trade in fish and fishery products derived from IUU fishing. Finally, Article 69 provides that stock or species-specific trade-related measures may be necessary to reduce or eliminate the economic incentive to engage in IUU fishing.


CITES is an important policy tool for regulating trade where trade itself is or may be driving a species towards extinction. As such, CITES is an ‘emergency’ mechanism for situations where management efforts have been so inadequate that a species is threatened.

CITES works by subjecting international trade in specimens of selected species to certain controls. All import, export, re-export and introduction from the sea of species covered by the Convention has to be authorised through a licensing system. Each Party to the Convention must designate one or more Management Authorities in charge of administrating that licensing system and one or more Scientific Authorities to advise them on the effects of trade on the status of the species.

The species covered by CITES are listed in three Appendices, according to the degree of protection that CITES members have determined is needed. Appendix I includes species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances. Appendix II includes species not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilisation incompatible with their survival. The Parties developed a set of biological and trade criteria to help determine whether a species should be included in Appendices I or II. At each regular meeting of the CoP, Parties submit proposals based on those criteria to amend these two Appendices. Those amendment proposals are discussed and then submitted to a vote. Appendix III contains species that are protected in at least one country, which has asked other
CITES Parties for assistance in controlling the trade. Changes to Appendix III follow a distinct procedure from changes to Appendices I and II, as each Party is entitled to make unilateral amendments to it.

While CITES has listed several marine species on one or more of its Appendices, it is only in the past few years that CITES members have become more open to the listing of commercially valuable fish species. Since 1998, CITES has been particularly involved in regulating international trade in sturgeon. In fact, given concerns about the impacts of unsustainable harvesting of and illegal trade in wild sturgeon, all sturgeons and parts or derivatives thereof (e.g. caviar, meat, skin, etc.) that enter international trade require the issuance of CITES permits or certificates. Each year, the Secretariat must be satisfied that all the countries which share a particular species have provided information on the status of the stock and have agreed on an appropriate regional conservation strategy and monitoring regime upon which agreed catch and export quotas for the species concerned are based. In January 2006, the Secretariat decided not to grant any certificates for any sturgeon caviar worldwide due to its dissatisfaction with the level of quotas proposed by countries and the information they provided on the sustainability of such catch levels (ICTSD, 2006d).

Even where the scientific necessity of listing a particular species may be clear, the potential listing of commercial fish species usually involves high economic stakes and thus poses political challenges. In 1997, for example, a proposal to establish a Marine Finfish working group to permit further discussion of these issues was rejected, as were proposals to make the listing of marine species easier by amending the criteria for listing on Appendices I and II. In 2002, a major shift occurred when the CITES Parties agreed to co-operate with CCAMLR to strengthen controls over international trade in Patagonian Toothfish. As over 90 percent of toothfish products enter into international trade, such co-operation is believed to assist in reducing the significant threat posed to the species from illegal, unreported and unregulated fishing (Traffic, 2003). In 2002, CITES Parties also added whale and basking sharks to Appendix II, followed by the great white shark in 2004.

8.3 Policy debates, tensions and challenges

There is a range of debates about the impact of trade-related measures on trade, sustainability and socio-economic objectives.

The relationship between trade law and environmental law

Article XX of the General Agreement on Tariffs and Trade (GATT) outlines the general exceptions to WTO rules, i.e. the conditions under which trade restrictions are exempt from legal challenge. Under this Article, WTO Members may adopt trade-restrictive measures for a variety of specified reasons (with adequate supporting evidence), including those that are:

- necessary to protect human, animal or plant life or health; and
- relating to the conservation of exhaustible natural resources, if such measures are made in conjunction with restrictions on domestic production and consumption.

So far, dispute settlement panels have interpreted the term "necessary" to mean 'least trade-restrictive'. Environmental regulations imposed under this article must not be "arbitrary or unjustifiable discrimination between countries where the same conditions apply" or "a disguised restriction on international trade". These qualifiers attempt to prevent a nation from imposing environmental regulations that are simply disguised protectionism. The text of the GATT clearly states that some trade restrictions are permissible in the interest of conservation and animal and plant health, even though they violate the general principles of the GATT.

Well-crafted decisions or actions taken by RFMOs would most likely fall within one or both of these
exceptions. The use of trade-related measures by RFMOs such as ICCAT and CCAMLR opens the door for other RFMOs to consider using similar methods to enforce their management decisions. Pending the outcome of ongoing negotiations on the relationship between MEAs and the WTO, it remains possible that non-members will challenge trade measures developed under MEAs and RFMOs in the WTO forum (particularly if a country is a member of the WTO but not the MEA or RFMO under consideration) (Brack, 1998; Stone, 1999). Where conflicts arise, some governments may also consider using dispute settlement procedures outside the WTO to address issues relevant to conservation of marine living resources and trade measures. Australia and New Zealand, for example, turned to the International Tribunal for the Law of the Sea in the context of a dispute over Southern Bluefin Tuna with Japan (McLaughlin, 1997).

The first major conflict between trade law and an environmental protection measure was the dolphin-tuna case between Mexico and the United States in 1991. GATT ruled against the US Marine Mammal Protection Act, which required that tuna be caught with fishing techniques that are not associated with the capture of wild dolphins. Subsequently, the settlement dispute panel also overruled the US Endangered Species Act, where bans were enforced against wild, trawl-caught shrimp from Thailand, Nigeria, Venezuela and Indonesia, since these methods could harm turtle species.

_The ongoing negotiations on the relationship between MEAs and the WTO_

In the WTO context, it is possible that a WTO Member could launch a WTO dispute to complain about restrictions on trade that derive from trade-related environment or fisheries management measures. While no MEA-based measures has thus far been challenged at the WTO, governments agreed at the Doha WTO Ministerial to conduct negotiations aimed at clarifying the relationship between WTO rules and 'specific trade obligations' in MEAs (paragraph 31(i) of the Doha Ministerial Declaration, WTO 2001b). Whether and how the negotiations impact the use of trade measures in fisheries-related agreements and by RFMOs will, however, depend on how countries decide on a number of outstanding issues, including:

**What constitutes an MEA?** The US, Canada, Australia and India would like to keep the coverage as restricted as possible. The US and Canada, for example, would like to limit the number of MEAs referenced by the WTO to just six, only one of which, CITES, has any bearing on fisheries. Australia and India favour the inclusion of those MEAs that are already in force and that were negotiated under the auspices of the UN, while Japan would also include those about to enter into force. In contrast, the EU would like to see a broader coverage that would include MEAs negotiated under the UN and other procedures open to all (including regional arrangements) with a minimum of three parties.

**What constitutes a trade-related measure?** The US, Argentina, Canada, India and Malaysia would like to limit the definition of trade-related measure to those that are mandatory and explicit in the MEA. In contrast, the EU and Switzerland would also like to include those measures that are not explicitly provided for or mandatory under the MEA itself, but are necessary to achieve the MEA's objective. The latter approach would significantly increase the measures covered by the resulting disciplines. Japan and Switzerland have cited ICCAT and CCAMLR among those MEAs that would fall under the broader category.

**Should MEA decisions and resolutions be included?** Members have debated whether only the MEAs themselves should be covered or also the decisions and resolutions adopted under them. As Korea pointed out, this question would for instance be relevant in relation to ICCAT, which adopts trade measures under resolutions, or for conservation measures adopted under the CCAMLR.

To resolve any outstanding questions about the MEA-WTO relationship, WTO Members have several options before them. Some analysts...
suggest that Members could amend certain WTO agreements (such as the exception provisions of GATT Article XX) or draft an “Understanding of Interpretation” to explicitly accommodate 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). This process could also include collaboration with the FAO and organisations with environmental expertise to develop an overview of the trade policy considerations that RFMO and MEA negotiators should consider 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). Alternatively, WTO 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.

Relevant international processes

The key international processes where trade-related fisheries management and environmental protection measures are discussed are at the Conferences of the Parties and meetings of technical working parties of MEAs and of RFMOs.

Policy objective: Profitability and export revenue

Trade-related environment and fisheries management measures can provide an important tool to address fishing activities that do not comply with management standards and quota systems, facilitating fairer competition among operators in a particular fishery. They can be a tool to help ensure that those countries and industries which fish sustainably secure the greatest share of profits and export revenues without being undercut by fishing activities that violate international and national fisheries management efforts.

In recent years, the international community appears to have become more supportive of trade measures provided for by multilateral co-operative agreements (such as MEAs) and which are implemented multilaterally. Multilateral measures are widely considered to be less susceptible to protectionist aims than those measures based on national standards. In general, unilateral trade measures tend to provoke the greatest concerns among fishing nations.

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.

At the WTO, environment-related trade measures are also under discussion in the Committee on Trade and Environment and in the ongoing Doha Round negotiations on the relationship between WTO rules and MEAs.

At the FAO, key relevant processes are the annual meetings of the Sub-Committee on Fish Trade and other annual meetings related to the implementation of the Straddling Stocks Agreement and the FAO Code of Conduct.

Finally, the UN Commission on Sustainable Development continues to include ocean, marine biodiversity and fisheries issues as part of its mandate. The 2002 World Summit on Sustainable Development (WSSD) process also called for follow-up by a range of international organisations on matters related to fisheries and emphasised the need to ensure the mutual supportiveness of trade and MEAs. A Global Forum on Oceans, Coasts and Islands was also created at the summit, bringing together ministers and high-level government representatives as well as representatives from intergovernmental and non-governmental organisations, the private sector and the donor community. It aims to catalyse useful strategies for achieving implementation of the global oceans agenda.
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. Importantly, some countries remain cool to the idea that trade measures could be used even in association with the consensus-based MEAs, most notably those that fear the economic costs of complying with trade measures and the risk that they will be used for protectionist purposes.

One response to these concerns is a call for greater international harmonisation of environmental standards to level the playing field (see Chapter 4 on standards).

**Policy objective: Resource sustainability and environmental protection**

The implementation of trade measures adopted by international fisheries and environmental agreements is generally relatively recent. As such, while there is some preliminary evidence as to whether or not the schemes are efficiently implemented and/or attract compliance; it is too early in most cases to assess whether these measures ultimately achieve their environmental and sustainability objectives.

In the meantime, it is clear that trade-related measures (whether certification schemes, vessels lists, import bans or other measures) are increasingly perceived by governments as useful tools to raise political awareness of the importance of sustainable fisheries. In the case of RFMOs, trade measures are seen by members as a tool for bolstering otherwise limited enforcement capacity of most RFMOs by, for example, serving as an additional source of pressure for compliance with international arrangements by both members and non-members. This potential has been supplemented by the growing willingness among members of RFMOs to consider the use of trade measures to combat the activities of foreign distant water fishing vessels operating either legally (through fishing access agreements) or illegally within their EEZs. In all of these cases, governments appear to concur that the positive environmental impact of trade measures is likely to be highest where they are developed multilaterally and where they are accompanied by effective fisheries management policies (Sen, 1994).

The effectiveness of some particular kinds of trade measures in achieving their environmental management purposes has been widely debated and experts advise careful attention to the type of trade measure used (see e.g. Barbier, 1990; Burgess, 1994). Trade measures, like fisheries management in general, can face implementation challenges - including inadequate technical, financial and institutional capacity, limited monitoring and enforcement capacities, illegal trade, insufficient incentives for participation and failures in co-operation between countries. The literature raises particular questions about the effectiveness of trade bans in cases where the underlying environmental and economic context is complex and inadequately understood (Barbier and Schulz, 1997; Dean, 1991; OECD, 1999).
Policy objective: Social development, employment and food security

The use of trade measures in environmental regimes can be contentious for socio-economic reasons. Whether trade measures are taken to defend distinctly national standards or an internationally accepted environmental or fisheries management objective, they can raise questions of equity between trading partners. Of particular concern to developing countries are trade-measures that require them to engage in expensive environmental protection or fisheries management measures which demand significant government resources or capacity. In cases where financial resources and technical capacity is limited, the burden of promoting more sustainable fisheries through trade measures may fall disproportionately on the weakest countries and on some of the poorest fishing communities (CSE, 1996; CSE, 1998; Pearson, 1998).

In particular, decisions taken by RFMOs to require Catch Documentation Schemes (as well as other management tools such as vessel monitoring systems) generate costs that developing countries often find difficult to shoulder. At present, there are no arrangements within RFMOs to share the burden of compliance with these regulations which can include the need for sophisticated administrative, logistical and documentation procedures as well as investment in vessels and technologies to aid in monitoring (Roheim and Sutinen, 2006). To promote fairer cost-sharing, the RFMOs could look to a range of MEAs for precedent; CITES, for example, has a system of financial and capacity-building assistance for developing countries, including training of individuals, purchase of capital equipment and development of infrastructure.

A core constraint to improved monitoring and enforcement in developing countries, particularly the implementation of various catch documentation and certification schemes, is the affordability and appropriateness of monitoring equipment. To aid compliance, one important option is to promote stronger technology transfer. Industry or private foundations might, for example, support the acquisition of relevant on-board computerised traceability systems and other environmentally-friendly technologies.

Finally, to ease the regulatory and cost burdens on developing countries, greater efforts could be made between RFMOs and MEAs to streamline the different certification, documentation and other requirements. Along with various national labelling laws, developing countries otherwise confront a bewildering number of labelling and documentation requirements in order to get their fish to market.

In addition to capacity building, cost-sharing for enforcement and greater coherence among the trade measures adopted, other co-operative options could include joint financing and implementation of projects, ‘green loans’, credit guarantees, and grace periods for countries within which to satisfy MEA and RFMO commitments (Osakwe, 1997).

Finally, the willingness of governments to develop and implement trade-measures adopted by MEAs and RFMOs is likely to improve significantly if they were coupled with broader efforts to reduce the economic pressures which drive overfishing in their waters. As noted in other chapters, this could include efforts to reduce foreign debt which drives some countries to sacrifice sustainability considerations to acquire foreign exchange. It could also include measures that help countries improve the profitability of their fisheries resources, including support for initiatives to add greater value to fisheries exports (e.g. through processing) and to meet higher quality standards, and also to improve the access of developing country fish exports to the most profitable segments of the international market.
SUMMARY AND RECOMMENDATIONS FOR FURTHER RESEARCH

This policy discussion paper has emphasised the substantial and growing influence of international trade on sustainable development outcomes in the fisheries sector at the global, national and local levels. It has documented the interplay between trade, sustainability and socio-economic objectives related to fisheries, highlighting the challenges that frustrate efforts to promote greater coherence between the various policies employed to achieve each of these goals.

This paper has argued that regardless of the policy vantage point from which stakeholders operate, the economic and environmental sustainability of the fisheries sector relies on greater efforts by all actors to grapple with the diversity of factors that affect global fishery production, trade and conservation. Across the range of policy issues where fisheries and trade issues converge, a common set of constraints impacts the potential for sustainable development outcomes, including: insufficient dialogue across the web of relevant regional and international decision-making processes; shortages of ecological data on the state of fisheries and marine environments; incomplete understanding of the economics of fisheries trade; and inadequate acknowledgement of the tensions that different policy objectives and tools can generate.

To help enhance the quality of interactions among stakeholders working to move policy processes forward with a sustainable development approach, Table 9.1 provides an overview of the key costs, benefits, compromises and tensions that emerge in each of the major policy arenas that shape fisheries trade. The paper concludes here with a list of areas for further research that will bolster the prospects for meaningful policy dialogue in the fisheries sector by filling outstanding data gaps and generating concrete advice and lessons for ways that stakeholders can address policy tensions that arise:

Market structure of fisheries:
- The structure of fisheries markets, such as the level of competition or concentration among buyers and sellers; the way that industries are organised to reflect risk and opportunities in global production; trends in income earned by different actors within the sector (e.g. harvesters, processors, traders, wholesalers and 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; the impact of different tariff rates or other trade-related measures on the price of fish as well as supply and demand for fish and fishery products.
- The impact of private and public debt and debt servicing obligations on overfishing and on efforts to reduce fishing capacity.

Environmental, economic and social impacts of trade
- Environmental, economic and social impact assessments of the benefits and costs of trade in fish and fishery products.
- 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.
- International trade agreements’ SDT provisions for developing countries, and how improved application of these might help or hinder efforts to reduce over-exploitation 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 fishery 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**

• 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 ecolabelling schemes.

• Policy options for resolving social and environmental tensions surrounding 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) and their relationship with the WTO.

• 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 value-added fishery products.

• Defining participatory international 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.
Table 9.1: Summary of linkages between trade policy issues and sustainable development priorities

It is important to note that the impacts included in the table below should be seen as potential impacts; in many cases, empirical evidence continues to be too scarce to draw definite conclusions about the precise interlinkages between trade policy issues/tools and the achievement of public policy objectives. Also, actual impacts will vary considerably depending on the particular circumstances of the trading partners. It should also be borne in mind that the objectives are closely related to and dependent on each other and potential impacts always need to be assessed in the context of the various policy objectives.

<table>
<thead>
<tr>
<th>Tariff Structures (including reductions of tariffs and tariff escalation)</th>
<th>Objective 1: Trade</th>
<th>Objective 2: Environment</th>
<th>Objective 3: Socio-economic development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitated market access and increased export earnings through lower tariffs</td>
<td>+</td>
<td>+ Opportunity of investing export revenue in environmental management</td>
<td>+ Increases in producer prices and income resulting from trade liberalisation</td>
</tr>
<tr>
<td>Encourage value addition by addressing tariff escalation</td>
<td>+</td>
<td>+ Less pressure on exporting countries’ resource through value-addition (i.e. same or greater return for same or lower resource use)</td>
<td>+ New or improved trade opportunities for fishers and processors</td>
</tr>
<tr>
<td>Loss of government revenue through tariff reductions</td>
<td>-</td>
<td>+ Reduced pressure on importing countries’ stocks due to availability of cheaper imports</td>
<td>+ Greater availability of cheaper imports for consumers and processors</td>
</tr>
<tr>
<td>Preference erosion</td>
<td>-</td>
<td>+ Increased exploitation resulting from greater trade and demand</td>
<td>- Displacements of small-scale fishers by commercial operators taking advantage of trading opportunities</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Diversion of fish from domestic consumption to export</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Threat of market concentration in aquaculture and possible conflicts with capture fisheries</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Increased competition between domestic fishers and processors with cheaper importers</td>
</tr>
<tr>
<td>Tariff Structures (including reductions of tariffs and tariff escalation)</td>
<td>Protection of domestic industry against artificially cheap imports</td>
<td>Reduction in potential positive or negative environmental impacts resulting from tariff liberalisation (see above)</td>
<td>Protection of importing countries’ fishing and processing industries in case of unjustified dumping</td>
</tr>
<tr>
<td>Protection of an uncompetitive industry in cases where duties are unwarranted</td>
<td>+</td>
<td>- Greater vulnerability of small-scale producers to duties, less impact on large-scale exporters</td>
<td></td>
</tr>
<tr>
<td>Potential loss of revenue by exporters faced with anti-dumping duties</td>
<td>-</td>
<td>Impacts on earning and revenue in importing countries’ processing industry and retail sector due to lower availability and higher prices of fish imports</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Higher consumer prices in importing country</td>
<td></td>
</tr>
<tr>
<td>Standards and other NTMs</td>
<td>Objective 1: Trade</td>
<td>Objective 2: Environment</td>
<td>Objective 3: Socio-economic development</td>
</tr>
<tr>
<td>--------------------------</td>
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<td>---------------------------------------</td>
</tr>
<tr>
<td>+ Possibility of accessing new markets, taking advantage of market niches, or consolidating existing markets if compliant with standards</td>
<td>+ Better environmental quality in exporting and importing countries through compliance with environmental standards</td>
<td>+ Possible spill-over effects from compliance with export standards on domestic food safety and environmental quality Burden of compliance particularly on small-scale producers Possibility of a two-tier market with varying quality for export and domestic market</td>
<td></td>
</tr>
<tr>
<td>- Barriers to market access due to compliance cost and/or lack of capacity to comply</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eco-labelling and other market measures</th>
<th>Objective 1: Trade</th>
<th>Objective 2: Environment</th>
<th>Objective 3: Socio-economic development</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Possibility of accessing new markets, taking advantage of market niches, or consolidating existing markets if compliant with standards</td>
<td>+ Incentive for sustainable management and harvesting of fisheries resources Difficulties in effectively designing and implementing labelling schemes Possibility of two-tier market (ie North-South)</td>
<td>+ Potential opportunities for fishers and processors to generate income and employment by exploiting market niches Burden of compliance particularly on small-scale producers</td>
<td></td>
</tr>
<tr>
<td>- Barriers to market access due to compliance cost and/or lack of capacity to comply (where there is a strong demand for labelled products)</td>
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<td></td>
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<tr>
<td>- Market opportunities dependent on demand</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>- Possible “discrimination” between domestic versus foreign labels</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Subsidies</th>
<th>Objective 1: Trade</th>
<th>Objective 2: Environment</th>
<th>Objective 3: Socio-economic development</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Distortion of competitive relationships between subsidised and non-subsidised fleets</td>
<td>+ Subsidies to finance fisheries management, stock assessments and capacity reductions Contribution of subsidies to over-capacities and overfishing</td>
<td>+ Subsidies to finance social programmes and support disadvantaged regions, fishing operators and processing industries Lower cost of production and consequently lower consumer prices Competing with subsidised fleets particularly difficult for small-scale fishers Over-exploitation by subsidised fleets undermines resource base</td>
<td></td>
</tr>
</tbody>
</table>
### Access agreements

- Revenue from access fees
- Economic use of resource in absence of domestic fishing capacity
- Access fees often do not represent value of fisheries resources

- Use of access fees for management
- DWF fleets’ support in monitoring compliance with management schemes
- Often not based on management schemes, stock assessment, sustainable catch levels or regulation of fishing methods
- Lack of regional approach to regulating access to shared stocks
- Overcapacity and exploitation due to subsidised access fees and fleets

- Possible economic spill-over effects in host country (e.g., processing, employment on boats, servicing etc)
- Use of access fees for social programmes
- Competition between local fishing fleets and (often subsidised) distant water fishing fleets in national waters
- Over-exploitation by DWF fleets undermines resource base

### Trade measures in fisheries management regimes

- Balancing competitive relationships by providing a mechanism to deal with free riders or non-compliant fishing nations
- Use of unilaterally imposed measures for protectionist purposes or to impose a country’s standards on others

- Incentive for compliance with environmental standards and management (enforcement)

- Difficulties in implementation, esp. monitoring and enforcement
ENDNOTES

1 Until the 1980s, international law only allowed states to claim jurisdiction over a narrow band of “territorial sea”, usually up to 12 miles wide. From the 1960s this was challenged by the emergence of a large number of non-industrialised states who were eager to derive maximum benefit from the exploitation of their coastal resources. These countries thus played a leading role in the worldwide recognition, in the 1980s, of the 200-mile Exclusive Economic Zone (EEZ). Given that ninety percent of the world’s marine living resources are found within 200 nautical miles of the coast, the creation of the EEZ had the effect of stringently limiting open access to fish stocks, as most of the fish resources in the world were brought within the jurisdiction of coastal states.

2 It should be noted that considering how rapidly fisheries production (in terms of quantity and value) has increased in the past decade, even the most current reporting from the FAO can only broadly suggest trends. In particular, we should be aware that production value as share of GDP has likely increased dramatically in the aquaculture producing countries such as Thailand, Vietnam and China. Additionally, in cases such as the Maldives, much production has been halted, or at least significantly slowed as a result of damages incurred in the December 2004 Tsunami. Such figures indicate, however, the extent to which this sector was important in the Maldives and the impact that fissures in the industry have on the national economy as a whole.

3 The results of these projects have often been unsatisfactory, largely because of inadequate importer-customer relationships, little or no advantage in terms of quality and price, and the failure of products to meet the needs of consumers - shortcomings resulting from inadequate market research. Experience has shown that the key to success lies in strong customer partnerships, sound market research, excellent quality of the product, reliability in supply, a constant drive for improvement, price competitiveness and attractive packaging (FAO, 2004a).

4 The information provided in this section is drawn directly from FAO (2004a).


6 Information in this section draws from Ahmed (2006).

7 See for example Bhattacharya et al., 1998; Diop, 1998; Johannes and Riepen, 1995; Saine, 1998; Samb, 1998; Stone et al., 1999.

8 For examples of studies investigating these relationships, please see Bushmann et al. (2002); Soto and Norambuena (2004) and Srivastava et al. (1993). Further, in some aquaculture industries, wild fry are harvested to be reared in aquaculture, generating concern about the possibility of overharvest and concomitant decline of wild stocks; see for example Ronnback and Bryceson (2002).

9 Most-favoured-nation treatment (GATT Article I, GATS Article II and TRIPS Article 4) is the principle of not discriminating between one’s trading partners. National Treatment is the principle of giving foreign producers the same treatment as national producers. GATT Article 3 requires that imports be treated no less favourably than the same or similar domestically-produced goods once they have passed customs. GATS Article 17 and TRIPS Article 3 also deal with national treatment for services and intellectual property protection. See WTO website at http://www.wto.org/english/glossary_e/glossary_e.htm

10 A related Uruguay Round ministerial decision gives customs administrations the right to request further information in cases where they have reason to doubt the accuracy of the declared value of imported goods. If the administration maintains a reasonable doubt, despite any additional information, it may be deemed that the customs value of the imported goods cannot be determined on the basis of the declared value. For more information, please see: http://www.wto.org/english/docs_e/legal_e/20-val_01_e.htm

11 For more specific information, please refer to: http://www.ams.usda.gov/cool/


13 A range of general organic labelling schemes are in place (including the International Federation of Organic Agriculture Movements, Naturland Organic Standards, Soil Association Certification Ltd,
National Association for Sustainable Agriculture Australia, BioGro New Zealand Production Standards, KRAV Kontroll AB Organic Standards, and Debio Organic Aquaculture Standards (Bostock et al., 2004). The efforts to explore organic labelling of fish are more recent.

In 2001, an advisory panel to the US Department of Agriculture concluded that wild seafood should not qualify as organic, but farmed fish might. In the meantime, farmed salmon continue to offer increasingly strong competition to wild salmon. For further information, see Associated Press (2003).

One exception is the single issue ‘dolphin-safe’ label attached to a large proportion of tuna products in the US market. However, the label is ancillary to regulatory requirements, so labelling alone cannot be identified as the primary cause of the high market share.

The task of assessing the sustainability of fisheries based on flexible criteria might result in high certification costs. This in turn might open the door to arbitrariness and/or the creation of loopholes in inspection and monitoring. Lack of transparency or inadequate expertise in ecolabelling programmes could lead to doubts about the credibility of claims made by, and certified by, developing country accredited bodies (Tickell, 1999; Mattoo and Singh, 1994). The challenge will be to balance the application of 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).

These data were collected before the Common Fisheries Policy underwent significant reform, much of which was targeted at eliminating harmful fisheries subsidies. Although direct support for capacity enhancing subsidies has been reduced and/or eliminated under the reforms, the total amount of subsidies provided has remained unchanged; rather, it has shifted to less harmful and environmentally beneficial subsidy programs. (personal communication, EU Fisheries representative, October, 2005).

This enormous number results from a single notification to the WTO by Japan of a subsidy for accelerated depreciation of fishing boats (G/SCM/N/38/JPN). This subsidy was not captured by the OECD or APEC studies. According to Virdin (2001), this is not an abnormal subsidy, as Japan retroactively reported the depreciation program, indicating that it offered subsidies of similar value from 1991-1996 (G/SCM/N/38/JPN).

Adverse effects are defined as any one of three harms: 1) Injury to the domestic industry of another Member, 2) ‘Nullification or Impairment’ of benefits accruing directly or indirectly to other Members under GATT1994, or 3) ‘Serious Prejudice’ to the interests of another Member. Serious prejudice usually applies when the complaining Member is trying to export into the market of the subsidising Member or into a third market where exports from the two markets compete. Serious prejudice can also apply if a subsidy on a primary product or a commodity causes an increase in the world market share for the product that is enjoyed by the subsidising Member. See Schorr (2004).

The FFA is a regional body designed to provide expert fisheries management and development advice and services to member countries from the western and central Pacific region. FFA was formed under and international convention and is based in Honiara, Solomon Islands. For more information see: www.ffa.int

ICCAT’s main activities include compiling fishery statistics from its members and entities fishing for these species in the Atlantic Ocean; co-ordinating research, including stock assessment; developing scientific-based management advice; and providing a mechanism for contracting parties to agree on management measures.

The aim of the Convention is to conserve marine life, which does not exclude harvesting as long as such harvesting is carried out in such a way as to allow conservation of Antarctic marine resources, conservation being defined by the Convention itself as including “sustainable use”. The Convention adopts an ecosystems approach and was one of the first international conventions to include the requirement to carry out an environmental impact assessment.

This summary draws directly from Roheim and Sutinen (2006). They in turn based their analysis on Tarasofsky (2003).

This view seems broadly shared by India, Australia, Hong Kong, China, Chinese Taipei, Korea, Argentina, India, and Brazil.
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For further information, visit http://www.trade-environment.org/page/ictsd/projects/fish_desc.htm

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Founded in 1996, the International Centre for Trade and Sustainable Development (ICTSD) is an independent non-profit and non-governmental organization based in Geneva. By empowering stakeholders in trade policy through information, networking, dialogue, well-targeted research and capacity building, the Centre aims to influence the international trade system such that it advances the goal of sustainable development.