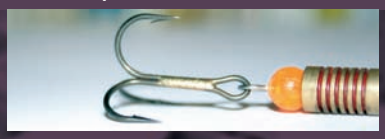
ICTSD Project on Fisheries, Trade and Sustainable Development


Market Access and Trade Liberalisation in Fisheries

By Mahfuz Ahmed
WorldFish Center

ICTSD
International Centre for Trade and Sustainable Development

Issue Paper No. 4

Market Access and Trade Liberalisation in Fisheries

By Mahfuz Ahmed
The WorldFish Center

ICTSD
International Centre for Trade and Sustainable Development

Issue Paper No. 4

Published by

International Centre for Trade and Sustainable Development (ICTSD)
International Environment House 2
7 chemin de Balexert, 1219 Geneva, Switzerland
Tel: +41 22 917 8492 Fax: +41 22 917 8093
E-mail: ictsd@ictsd.ch Internet: www.ictsd.org

Executive Director: Ricardo Meléndez-Ortiz
Programme Manager: Heike Baumüller

For more information about ICTSD's programme on fisheries, visit our web site:
http://www.trade-environment.org

ICTSD welcomes feedback and comments on this document. These can be forwarded to Heike Baumüller, hbaumuller@ictsd.ch.

Acknowledgement

We wish to thank Aimee Gonzales, Ytha Kempkes, Audun Lem, Mark Talbot, SEAFish for Justice, Heike Baumüller, Ruth Fend, Sarah Mohan and Hilde Ludt for their useful comments and assistance. Special thanks also to Venetia-Hergreaves-Allen; Kate Viner, Bobbie Gerpacio, Bee Hong Yeo and Li Ping Ng for their valuable assistance in the collection and collation of data. We are also grateful to Sabrina Shaw and Jennifer Rietbergen for their editorial review of this document. This project is made possible through the support of the Dutch Ministry of Foreign Affairs.

Citation: Ahmed, M. (2006) *Market Access and Trade Liberalisation in Fisheries*, ICTSD Natural Resources, International Trade and Sustainable Development Series Issue Paper No. 4, International Centre for Trade and Sustainable Development, Geneva, Switzerland.

CONTENTS

TABLES

FIGURES

BOXES

ACRONYMS

ACP	Africa, Caribbean and the Pacific
ADMs	Anti-Dumping Measures
ASEAN	Association of Southeast Asian Nations
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CBD	Convention on Biological Diversity
COOL	Country of Origin Labelling
CTE	Committee on Trade and Environment
EBA	Everything But Arms Agreement
EC	European Commission
EEZ	Exclusive Economic Zone
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GATT	General Agreement on Tariffs and Trade
GMO	Genetically Modified Organism
GSP	Generalised Systems of Preference
HACCP	Hazard Analysis Critical Control Point (EU safety regulations)
ICLARM	World Fish Center
ICTSD	International Centre for Trade and Sustainable Development
ILO	International Labour Organization
ITC	International Trade Centre (UNCTAD-WTO)
ITLOS	International Tribunal for the Law of the Sea
IUCN	World Conservation Union
IUU	Illegal, Unreported and Unregulated Fishing
LDC	Least Developed Country
LIFDC	Low Income Food-Deficit Country
LRFF	Live reef food fish
MFN	Most Favoured Nation
MEA	Multilateral Environmental Agreement
MERCOSUR	Southern Common Market
MSC	Marine Stewardship Council
NAMA	Non-Agriculture Market Access
NGO	Non-Governmental Organisation
NOAA	US National Oceanic and Atmospheric Administration
NTBs	Non-Tariff Barriers
OECD	Organisation for Economic Co-operation and Development
PPPs	Public-private partnerships
RFMO	Regional Fisheries Management Organisation
SCM	Agreement on Subsidies and Countervailing Measures
S&DT	Special and Differential Treatment
SIDS	Small Island Developing States
SPS	Sanitary and phytosanitary
SSA	Southern Shrimp Alliance
TCFA	The Catfish Farmers of America
TBT	Technical barriers to trade
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
WHO	World Health Organization
WTO	World Trade Organization
WWF	World Wide Fund for Nature

FOREWORD

Fish and fish products provide important trade and livelihoods opportunities in many coastal developing countries. Nearly 40 percent of fish output is traded internationally with an export value of US$ 58.2 billion, making seafood one of the most extensively traded commodities in the world. Exports of fish products from developing countries today comprise 20 percent of agricultural and food-processing exports – more than tropical beverages, nuts, spices, cotton, sugar and confectionary combined. These exports are likely to increase as demand for fish products continues to increase. In addition to providing a significant source of export revenue for developing countries, the fishing sector also constitutes a vital component of domestic food intake and an important provider of local livelihoods.

However, market access barriers continue to pose serious obstacles for developing countries to expand their participation in international trade, add value to their exports and ensure sustainable fisheries development. While tariffs on fish and fish products are generally low in industrialised countries, they remain high in developing countries and pose a barrier to increased South-South trade. Also, tariff escalation (i.e. higher tariffs on processed products than on raw materials) and tariff peaks (i.e. particularly high tariffs on selected and often sensitive products) continue to hinder fish exports, in particular to industrialised country markets. Even more significant are so-called non-tariff barriers, such as food safety standards and traceability requirements, which many developing country exporters find difficult to meet. Anti-dumping measures, such as import duties, have also been used by some countries to protect their domestic industries from cheaper fisheries imports, such as shrimp and catfish.

To address some of these concerns, a group of countries have launched an initiative in the context of negotiations on non-agricultural market access in the World Trade Organization (WTO) to liberalise trade in fish and fish products through accelerated tariff reductions. The proponents have pointed to the significance of trade in these products for many developing countries as an important source of foreign exchange earnings, income generation, employment and food. Others, however, have raised concerns that accelerated liberalisation will hasten the overexploitation of fisheries by providing an incentive for increased fishing efforts, which would likely lead to over-fishing in exporting countries without proper management schemes. These countries point to continuously declining fish stocks around the world, citing estimates by the UN Food and Agriculture Organization that as much as 75 percent of global marine fish stocks are now fully exploited, over-exploited or depleted.

This issue paper – published in the context of the ICTSD project on *Fisheries, International Trade and Sustainable Development* – aims to contribute to these debates in an effort to develop fisheries-related trade policies and rules that are supportive of both resource management and livelihoods objectives. To this end, Mahfuz Ahmed – a fisheries expert from the Malaysia-based WorldFish Centre – explores existing constraints faced by developing countries in international fish trade (on both the demand and supply side), and examines the possible socio-economic and environmental impacts of fish trade liberalisation. Dr. Ahmed goes on to discuss how these issues have been addressed in relevant WTO agreements and the ongoing multilateral trade negotiations. He concludes by identifying a range of priority areas for action in the context of the WTO, capacity building initiatives and national policy.

We hope that you will find this paper to be stimulating and useful for your work.

Ricardo Meléndez-Ortiz
Executive Director, ICTSD

EXECUTIVE SUMMARY

Enhanced access to export markets is a major factor in determining whether developing countries can maintain and increase their high performance in fish trade and, in fact, the importance of market access for sustainable development is recognised by the UN Millennium Development Project. The reduction of many traditional trade barriers such as tariffs and quantitative restrictions through the General Agreement on Tariffs and Trade (GATT) and, more recently, the World Trade Organization (WTO) has played a significant role in increasing fish trade in the recent decade. Despite significant tariff reduction by both developing and developed countries, selective use of tariffs, including tariff peaks, tariff escalation and countervailing duties and non-tariff barriers (NTBs) related to food and environmental safety standards continue to limit access of fish to international markets. The negotiations launched under the WTO's "Doha Mandate" in November 2001 on non-agricultural market access (NAMA) seek to reduce both tariff and some NTBs. Nevertheless, major obstacles to the liberalisation of fish trade have emerged, including disagreements on approaches and modalities toward liberalisation; unpredictable adjustment costs due to changes in revenue structure in developing countries; and concerns about the negative impacts of eliminating tariffs for fish and fish products on the sustainable use of fish resources.

The main objective of this paper is to enable discussion and provide analysis on critical market access and trade liberalisation issues in fisheries, including recommendations on how fisheries might be taken into account in the current NAMA negotiations. Specifically, the paper analyses the pros and cons of liberalising fish trade, and explores options for accelerated liberalisation of the fish sector. The paper focuses on constraints faced by developing countries from both demand and supply perspectives. The demand-side considerations include market constraints related to trade, such as tariff and non-tariff barriers, while the supply-side constraints encompass domestic challenges in developing countries.

The primary focus of negotiations at the WTO in relation to fish trade should be to: (i) harmonise trade policies, including tariffs and NTBs; (ii) ensure trade contributes to social and environmental sustainability; and (iii) create a level playing field in trade and market access negotiations, including by increasing the capacity of developing countries in technical, institutional and legal areas. A three-pronged strategy involving simultaneous progress in the WTO negotiations, national policy reforms, and outreach and assistance by multilateral and non-governmental organisations (NGO) will be necessary to achieve effective liberalisation of fish trade. This will involve negotiations at the WTO on tariffs, standards and sustainability, support of research and capacity building to ensure compliance with NTB requirements and a steady supply of fish, and oversight of domestic policies affecting management of fisheries, trade and sustainable development. In ensuring fisheries sustainability, however, there should be concerted efforts to improve and monitor implementation of global rules on fisheries, in co-operation with the UN Food and Agriculture Organization (FAO), the UN Environment Programme (UNEP) and other fisheries-related UN agencies.

1 BACKGROUND

The latter part of the 20th century has seen very significant growth in the global fish trade and in developing countries' fish exports in particular. The current value of global fish trade is close to US$60 billion, compared to about US$15 billion in the early 1980s. Developing countries hold approximately 50 percent of the global export value of fish and represent 18 percent of the global import value. They therefore have an impressive trade surplus in fish commodities, which is particularly notable when compared with traditional agricultural exports that have shown little growth. The net fish exports from developing countries is worth an estimated US$18 billion and has surpassed all traditional agricultural exports such as beverage products, cocoa, coffee, sugar and rice. For many developing countries, fish trade represents a major source of foreign currency earnings, paying the bulk of the import bills for food, especially for a number of food-deficit or net food-importing developing countries (FAO, 2004b).

Continued access to foreign markets is a major factor for developing countries seeking to increase and maintain their high performance in fish trade. This is recognised by the UN Millennium Development Project which recommends that international trade policy should focus on "improved market access and terms of trade for the poor countries" in order to meet the Millennium Development Goals (MDG) (UN Millennium Development Project, 2005). Similarly, institutions such as the International Labour Organization (ILO) have recognised a need for "fairer rules for international trade, investment, finance and migration, which take account of all interests, rights and responsibilities" to enable all to take advantage of the opportunities from globalisation (ILO, 2004).

In recent decades, the removal or reduction of many traditional trade barriers such as tariffs and quantitative restrictions through the General Agreement on Tariffs and Trade (GATT), and more recently the World Trade Organization (WTO), has played a significant role in increasing fish trade. Nonetheless, despite significant tariff reduction by both developing and developed countries, the selective use of tariffs, including tariff peaks and tariff escalation and non-tariff barriers such as food safety and environmental standards, traceability requirements and countervailing measures, continues to limit access of fish to international markets.[1] Despite the 'Doha Mandate' (contained in the WTO Ministerial Declaration of November 2001) to negotiate on non-agricultural market access (NAMA) including fish products, liberalisation of fish trade continues to be constrained by disagreements on approaches and modalities toward liberalisation; unpredictable adjustment costs due to changes in the revenue structure in developing countries; fears of further erosion of preferential access to key markets; and concerns about the negative impacts of tariff elimination on the sustainable use of fish resources.

Overall, experts agree that market access and liberalisation in both developed and developing countries have significant bearings on the future patterns of fish trade among developing countries and between developed and developing countries (Delgado et al., 2003a).

As fish stocks are a renewable natural resource and expanding markets and liberalising trade may lead to over-fishing, it is hoped that fisheries trade policies will meet the requirements of environmental sustainability embodied in the MDGs and the World Summit on Sustainable Development objectives (Delgado et al., 2003a). Although many long-standing root causes of environmental problems in capture fisheries have been gradually addressed by a number of international agreements, at the same time poor management, including unresolved access and user rights at local, national and international levels, is still seen as a fundamental issue in fisheries sustainability which international trade rules will need to address. The market- and trade-induced growth of aquaculture has also introduced a new set of environmental and public health issues that will require

a combination of policy and technological changes. Public health issues surrounding fish consumption are having a direct impact on trade, prompting the constituencies in both developed and developing countries to seek new policies and undertake actions (Delgado et al., 2003a; Dey et al., 2005).

The main objective of this paper is to stimulate discussion and provide analysis on critical market access and trade liberalisation issues in fisheries, including recommendations on how fisheries might be considered in the current NAMA negotiations. Specifically, the paper analyses the pros and cons of liberalising fish trade and explores options for inclusion of the fish sector (as suggested by some and rejected by others) in accelerated liberalisation. The paper focuses mainly on the constraints faced by developing countries from both demand and supply perspectives. The demand-side constraints include market constraints related to international trade such as tariff and non-tariff barriers, while the supply-side constraints encompass domestic challenges in developing countries.

1.1 Global Fish Production, Consumption and Trade

Global fish production increased by 231 percent from 39.2 million metric tons in 1961 to nearly 130 million metric tons in 2001 (FAO, 2006). Since the mid-1980s, developing countries have overtaken developed countries as the main producers of fishery products. Asian developing countries are the largest fish producers, with production reaching 71.2 million tons in 2001, representing 55 percent of world production (FAO, 2005a). The share of all developing countries (including China) to total fish production increased from 42 percent in 1961 to 75 percent in 2001. China's share of global fish production increased more than four-fold from 8 percent to nearly 34 percent in the same period. By 2003, the list of the top ten fish-producing (both capture and aquaculture) nations, in terms of volume, had remained unchanged for more than a decade. These countries were China, Peru, India, Japan, the US, Indonesia, Chile, the Russian Federation, Thailand and Norway (FAO, 2004b).

The creation of exclusive economic zones (EEZs) in 1977 through the UN Convention on the Law of the Sea (UNCLOS) has had a significant influence in the shift of production in favour of developing countries.[2] The EEZs also stimulated international trade since countries that had fished widely in unclaimed coastal waters around the world became importers, while countries with large national fishery resources and low domestic demand became exporters. Fish stocks in the developed world declined due to continued over-fishing in previous decades. By 1989, production saw a sharp decline while stringent fishing quotas were imposed in the North Atlantic to counter continuing over-fishing, and also due to the reduction of fishing in the Eastern European bloc which had contributed significantly to fish catch in the developed region.

Although capture fisheries continue to account for the larger share in world fish production, most of the recent expansion in fishery production has come from the faster-growing aquaculture sector. Aquaculture grew at an average rate of nine percent from 1970 to 2002, while capture production remained relatively stable at around 90 million tons since the 1990s. Today, aquaculture contributes 32 percent of total fishery production, accounts for an increasing share of global trade, and provides approximately 40 percent of the world's total food fish supply (FAO, 2002b; FAO, 2004b). Technical innovations, private sector growth and increased market demand are the major drivers in the expansion of aquaculture in developing countries, particularly in Asia (Ahmed and Lorica, 2002).

On the demand side, increased consumption of fish in developing countries has been seen as the major driver of fish trade. As populations in these countries have grown and consumers have become richer, the resulting increase in demand for fish has altered markets around

the world (Delgado et al., 2003b). Global consumption of fish has doubled since 1973, and the developing world has consumed 90 percent of this increase. Evidence suggests that rapid population growth, rapid income growth, and urbanisation have produced greater increases in fish consumption than any lowering of price resulting from increased supply or increased production efficiency (Delgado et al. 2003b).

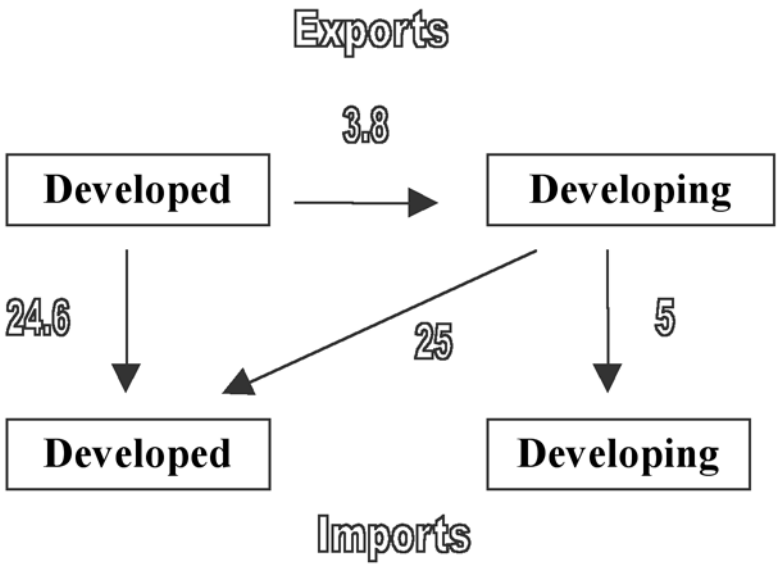
1.1.1 Trade Flows

Fish and fish products are among the most widely traded natural resource-based goods, with about 38 percent of global fisheries production entering international trade (live weight equivalent) – more than three times the percentage of meat that is globally traded. Figure 1 shows the four major trade flows associated with fish and fish products. Exports worth US$24.6 billion flowed between developed countries, with the EU a major importer and Norway a major exporter. Exports from developed to developing nations, consisting mainly of low-value small pelagic species, reached only US$3.8 billion, but are of crucial significance for food security. On the other hand, trade among developing countries, mostly in the form of fishmeal for use as fish oil in aquaculture, remained modest at US$5 billion. This South-South trade is nonetheless high in volume terms as it involves large quantities of low-value species. By contrast, flows from developing to developed countries were the highest (US$25 billion), consisting mostly of high-value food fish.

1.1.2 North-South Trade

Today, trade continues to flow primarily from developing to developed nations, largely involving high-value species such as shrimp, prawns, lobster and tuna. In 2002, exports from developed countries accounted for about 85 percent of the US$58.4 billion total value of imports of fish products (Figure 1). The EU, Japan and the US emerged as major importers, accounting for 24, 22 and 16 percent respectively of global import value (Figure 2). As a single market, the EU is by far the largest fish importer in the world, and the trend of fish imports in developed countries continues to grow. Preliminary data for 2003 suggest that major importing countries increased their imports of fish and fish products by about 10 percent (FAO, 2004b). In comparison, imports by developing countries account for only 15 percent of the total value of international fish trade (despite consuming one-third of all fish products). Positive net exports from developing countries to the developed region are expected to continue at least to 2020, but at a lower level than at present due to increasing South-South trade and growing consumption in developing countries (Delgado et al., 2003a).

Figure 1: Trade flows, 2002 (in US$ billions)



Source: Calculations based on Valdimarsson (2003); FAO (2004a, b).

In addition to satisfying consumer demand not met by domestic production, the processing, wholesale and retail of imported fish in the three major importing countries (EU, Japan and US) are of considerable economic significance. In many developing countries, on the other hand, fish exports generate much-needed foreign exchange revenues, which contribute substantially to the balance of payments and therefore have considerable macro-economic importance. This growing dependence on fish exports by developing countries has however exposed them to market shocks and price volatility and has forced them to comply with new sets of health and food safety-related rules such as sanitary and phytosanitary standards (SPS) and hazard analysis critical control point (HACCP) regulations.

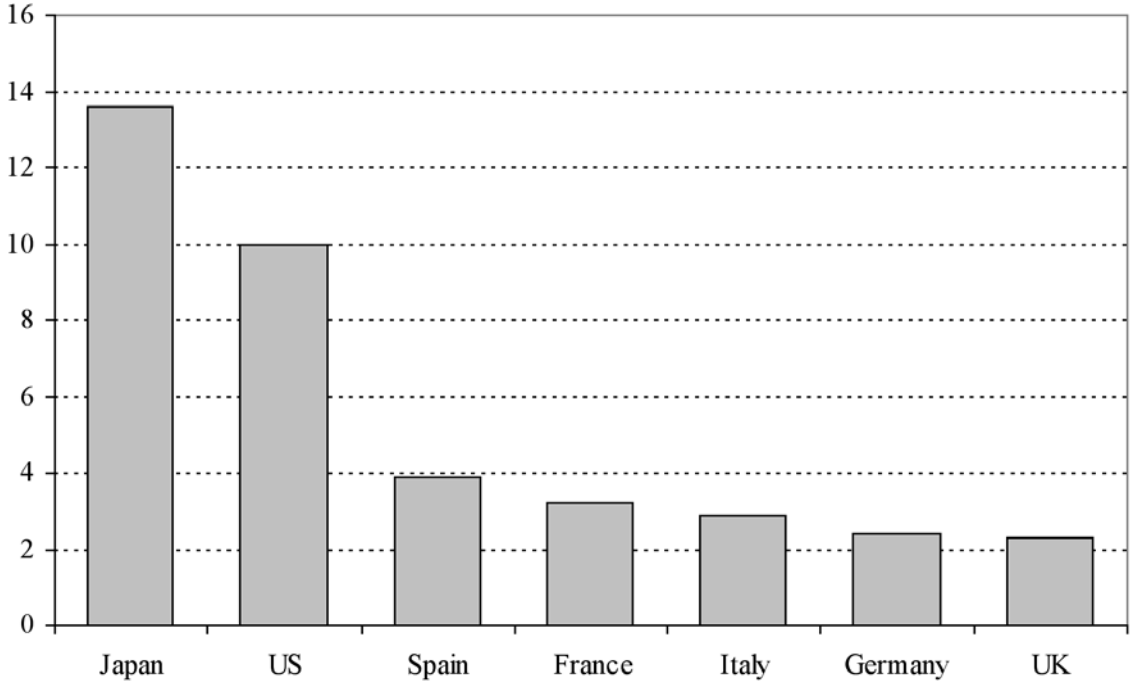
1.1.3 South-South Trade

Developing countries' share of global fish export value has grown steadily from 34 percent in 1979/81 to 46 percent in 1999/2001 and 51 percent in 2002 (FAO, 2004a, b). Intra-regional fish trade in Asia alone came to about US$11.7 billion during 2000-02 (FAO, 2005a).

The UN Food and Agriculture Organization (FAO) (2005a) projects that total demand for fish in developing countries will increase from 30.5 million tons in 1979/81 to nearly 140 million tons in 2015. Asia accounted for 68 percent of the total fish demand in 1979/81; this is projected to increase to 86 percent in 2010 and 2015. On average, people in 2015 will be consuming more fish, but the increases will accrue more slowly than in the past two decades.

The increasing demand for high-value food fish in developing countries will also impact on current flows of trade of high-value products, which has been concentrated so far in a few major markets in the developed world. Delgado et al. (2003a) project that annual per capita consumption of fish is expected to rise significantly to 39.5 kg in China and 25.8 kg in Southeast Asia by 2020. FAO (2005a) projects that annual per capita demand for finfishes in developing countries will increase from 10.7 kg in 1999/2001 to 13.5 kg in 2015, and in developed countries from 16.3 kg to 17.3 kg during the same period. As such, Delgado et al. (2003a) suggests a slowing and even a reversal of net export growth by developing countries (Table 1).

Figure 2: Top food fish importers, 2000 (in US$ billions)



Source: FAO (2004b).

Regional trade agreements, such as the Association of Southeast Asian Nations (ASEAN) Free Trade Agreement (AFTA), the Common Market for Eastern and Southern Africa (COMESA), and the South American Common Market (MERCOSUR), have in recent years seen an expansion of South-South trade that focuses on eliminating protective tariffs and harmonising trade policies within a region. In the first few years following the AFTA, for instance, average tariffs on fish commodities have come down to as low as three to five percent. Therefore, the increased fish supply and demand, combined with significant progress in the implementation of national, bilateral and multilateral free trade agreements in developing countries, will result in increased South-South fish trade.

1.2 Fish Trade and Developing Countries

Until the mid-1980s, developing countries as a whole were net importers of fish. By 2001, net exports shifted in favour of developing countries, increasing host total exports by 853 percent from 1961 levels. For low income food-deficit countries (LIFDCs), this increase has been 1,072 percent. Today, developing countries account for half of the nearly US$60 billion global fish exports, and LIFDCs make up nearly 20 percent (US$12 billion). *Net* export revenues from fish trade from developing countries grew from less than US$4 billion in 1980 to US$23.3 billion in 2001 (FAO, 2003). Indeed, for a number of food-deficit or net food-importing developing countries, fish exports have been a major source of foreign exchange. In Vietnam for example, exports of frozen catfish fillets to the US reached US$38 million in 2001 and US$55 million in 2002. The boom began when tariffs on most raw seafood in the US dropped to zero in 1999 (see Box 3 in section 2.3.3).

Fish commodities also have important links to food security. Fish protein is a crucial dietary component in many countries, contributing at least 50 percent of total animal protein worldwide. Overall, fish provides more than 2.6 billion people with at least 20 percent of their average per capita intake of animal

Table 1: Total net exports of food fish, actual and projected

Region	Total net exports (000 metric tons)			Net change (000 metric tons)	
	Actual		Projected	Actual	Projected
	1985	1997	2020	1985-1997	1997-2020
China	311	462	21	151	-441
Southeast Asia	315	696	594	381	-102
India	32	41	-286	9	-327
Other South Asia	37	118	6	81	-112
Latin America	489	1,962	2,645	1,473	683
West Asia and North Africa	79	184	183	105	-1
Sub-Saharan Africa	-146	186	75	332	-111
United States	-565	-901	-1,235	-336	-334
Japan	-1,037	2,073	-1,903	-1,036	170
European Union 15	-1,231	2,521	-2,081	-1,290	440
Eastern Europe and former Soviet Union	-704	614	-923	90	-309
Other developed countries	2,160	2,232	2,801	72	569
Developing world	1,377	3,877	3,341	2,500	-536
Developing world excluding China	1,067	3,415	3,320	2,348	-95
Developed world	-1,377	-3,877	-3,341	-2,500	536

Source: Delgado et al. (2003a).
Notes: Actual data are three-year averages centred on 1985 and 1997. Negative values indicate net imports.

protein (FAO, 2004b). Fish commodities, mainly sun-dried fish, form the cheapest and most accessible source of animal protein for displaced and poor communities. In addition, imports of low-value protein-rich fish commodities play an essential role in guaranteeing an adequate fish supply for domestic consumption in many poor nations. Some West African countries, for example, import nearly US$97 million worth of small pelagic species from the EU annually.

In terms of employment, approximately 95 percent of those engaged in fisheries and fishery-related activities are located in developing countries, frequently in the most impoverished communities (ICTSD-IUCN, 1999). Income and employment benefits from fish trade hence accrue to millions of fishers, farmers, processors (often women) and others in the production, input, and commodity supply chains at the micro level (Ahmed and Lorica, 2002; Kurien, 2004), and aid in the economic development of these countries.

Many fishers are part-time and self-employed artisanal fishers who work for local consumption and household food security.[3] The FAO estimates that 90 percent of the 15 million people engaged in ocean and coastal fishing are small-scale operators. Some experts consider that small-scale fishing produces as much fish for direct human consumption as the more efficient industrialised operations. If ancillary workers are included, there may be over 100 million people who rely on small-scale fishing for their income. However, many countries with large populations that are dependent on artisanal fisheries do not have adequate management policies (see section 3.2.4), which raises concerns regarding the long-term sustainability of their fisheries (Roheim, 2003).

1.3 Trends in Products and the Commodity Chains

1.3.1 Diversified Products

Currently, more than 800 fish species are estimated to be traded internationally in many different forms, shapes, brands and preparations. Among these, shrimp is the most important, accounting for about 18 percent of global fish export value and over 90 percent of the 4.2 million tons of global fish exports (FAO, 2003, 2005a).

Some 54 percent of the fish directly consumed by humans is marketed as fresh fish (Kura et al., 2004). In terms of quantity, the share of live, fresh or chilled fish has increased during the last decade (FAO, 2005a). This growth is a result of improved logistics and technology and increased demand. Live fish is particularly popular in Asia and in niche markets in other countries, mainly among immigrant Asian communities. An elaborate network of new technological systems, handling, transport, distribution, display and holding facilities has been developed to support the live fish trade. Increased awareness of the health benefits of fresh fish has also resulted in rising demand in developed countries in recent years (FAO, 2002a).

1.3.2 Value-Addition

Fish trade in developing countries is gradually evolving from the export of fish as a raw material to the export of processed fish products. Increasing the value-added of fish exports leads to greater export earnings for developing countries. China for one has made large profits from domestic value-addition by processing. A significant amount of exporting and re-exporting is also happening globally. Thailand imports tuna and cans it before exporting, China imports from the US and re-exoports, and Norway catches and imports for processing and then re-exports some of the processed fish products. Evident too is the increasing developed country investment in processing facilities in developing countries where labour costs are lower.

Furthermore, the fish processing industry is gradually changing and becoming more globalised. Industrial processing is increasingly taking place at locations other than the country of origin of the fish. This applies to both basic industrial processes and more advanced processes such as the development of new and higher-value products. This is an expanding industry, particularly in developing countries,

where it provides a source of employment, economic growth and development. However, processed fish products tend to face higher tariffs and tariff peaks in export markets (see section 2.1).

1.3.3 Supply Chains in Fisheries

The supply chain for fisheries products includes all links from the point of production (point of catch or farm site in the case of aquaculture) to the end-user or final consumer. It therefore includes all mechanisms, flows, interchanges, services and operators, which determine the relationships between producer earnings and the supply of the physical product. Flows through a well-functioning marketing system include exchanges of information on prices, market situation, trends, consumer preferences etc. as well as flows of physical product and of money, credit and property rights (www.oceansatlas.com).

For example, fish supply chains in India generally comprise:

fisherman —> commission agent —> supplier (pre-processor) —> exporter

whose respective roles are shown in Table 2.

Another example comes from the supply chain of milkfish in the Philippines, as shown in Figure 3 (Chong et al., 1982). The bulk of milkfish produced in the Philippines is consumed fresh, although small amounts of canned and bottled milkfish are now appearing on the market. As they do for most fishery products, brokers play a key role in milkfish disposal. They provide the crucial link between producers and fish buyers, performing important facilitating functions such as selling, pricing, and, often, supplying credit. Nevertheless, the husbandry of milkfish calls for the producer to also assume some marketing functions, e.g. sorting and grading at the farm level, consequently adding some value to the product before it leaves the farm.

Well-functioning supply chains that facilitate specialisation and exchange can provide immense benefits such as economic development, employment and higher income for producers and suppliers, and better prices and products for consumers. In most markets, the present structure of supply chains is a result of organic growth and dynamic structural adjustments over time, rather than the result of a specifically-designed development strategy. Where the supply chain is found to be operating

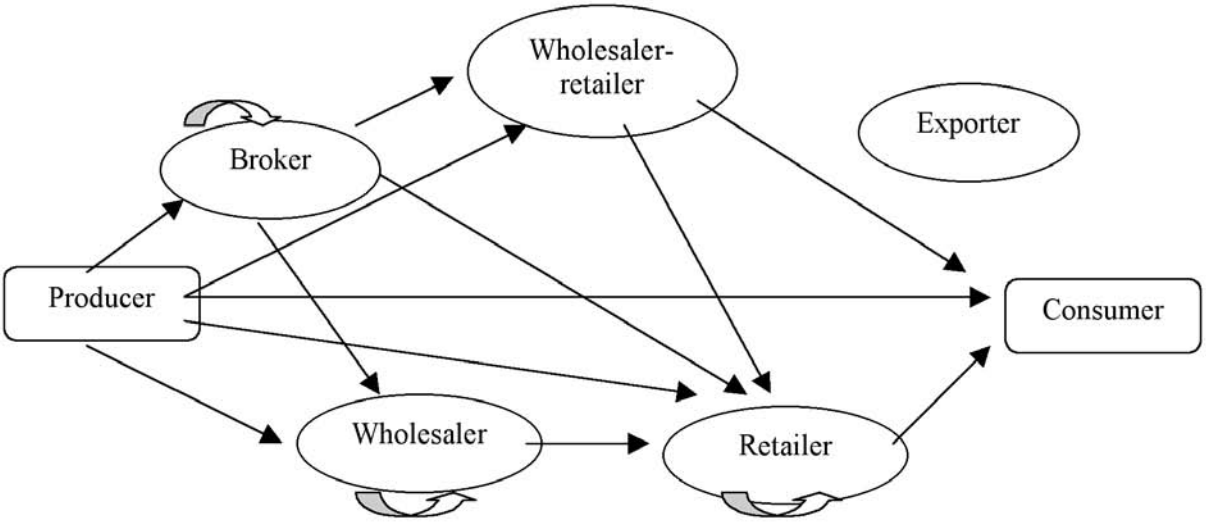
Table 2: Role of supply chain actors in India's fish industry, 2005

Fisherman	Commission Agent	Supplier (Pre-processor)	Exporter
Procures inputs: diesel, ice, food, nets, boat, 6-12 helpers	Receives fish from boat	Receives fish from agent	Receives fish as raw material
Undertakes 4-8 days fishing trip	Weighs fish	Stocks fish in crates filled with ice	Washes with potable water
Classifies fish as per fish category	Grades fish as defective or non-defective	Sorts fish in four grades as per quality standards of exporter	Processes using HACCP procedures
Stores fish in ice	Negotiates price with fisherman and supplier	Transfers fish to pre-processing unit	Packs processed fish
Unloads fish on docks after preliminary wash		Cleans fish	Performs export procedures and dispatches
Negotiates with agent and receives money		Negotiates price with exporter and agent	Negotiates price with importer and with supplier

Source: Kulkarni (2005).

well, there is little need for direct involvement of the government. However, in many countries, the prerequisites for well-operating markets are missing and corrective interventions by policy-makers are needed.

Figure 3: Milkfish supply chain in Luzon, Philippines (Source: Chong et al., 1982).



1.4 Status of Wild Caught Resources and Outlook for Future Supplies

According to the FAO (2004b), 52 percent of fish stocks monitored in 2003 were categorised as fully exploited and therefore producing catches close to their maximum sustainable limits; approximately one-quarter were overexploited, depleted or recovering from depletion (16, 7 and 1 percent respectively) and needed rebuilding; 21 percent were moderately exploited; and at least 3 percent were underexploited. During the period 1974-2003, two opposite trends were observed: (i) a consistent downward trend in the proportion of stocks with expansion potentials; and (ii) an increasing trend in the proportion of overexploited and depleted stocks from about 10 percent in the mid-1970s to approximately 25 percent in the early 2000s.

The significant subsidies provided to the fisheries sectors of many countries have contributed to capacities over and above those which are economically or ecologically sustainable. The Organization for Economic Co-operation and Development (OECD) (2003) estimated that the EU provides over US$1.4 billion worth of subsidies to the fisheries sector. These subsidies can contribute to stock depletion with concomitant negative effects on the economy, trade and environment of other countries that have an interest in the stock.

The declines in global fish stocks which have occurred despite the development of management policies by various countries are evidence of a lack of regulations and effective enforcement (Roheim, 2003). Increased global concern has resulted in a surge in multilateral environmental agreements (MEAs) and regional fisheries management organisations (RFMOs) aimed at curbing environmental degradation.[4] However, measures to control over-fishing and curb destructive fishing practices are increasingly hampered by the widespread incidence of illegal, unreported and unregulated (IUU) fishing (FAO, 2002b).[5] IUU fishing is a problem because catches are not accounted for in quotas and destructive methods such as blast fishing or cyanide poisoning are often employed. In Japan, it is estimated that production costs for tuna were 30 percent lower for IUU fishers, therefore promoting over-fishing (OECD, 2003).

Aquaculture will continue to expand, especially since its predictable supply patterns and high quality products are ideally suited for supermarket chains which are expected to provide an increasingly large proportion of world food demand in the future, including those in developing countries where their prevalence may increase enormously. If this is combined with a lowering of farmed fish prices due to competition between similar species, there will be an expansion of the total aquaculture seafood market, which will likewise affect wild fish demand (Ashe and Khatun, 2005).

Economic growth in developing economies will create opportunities for artisanal and small-scale fishers to specialise and graduate to an entrepreneurial mode of operation. Fish will become an increasingly high-value commodity and the shift in traded products from frozen low-grade whole fish to value-added products processed in developing countries will continue.

Sustainability concerns will increase and motivate environmental regulations and institutions, first in developed countries then in developing countries. Over-fishing will remain a major concern and the use of pelagic stocks for fishmeal and fish oil will become an important policy issue. The link between pollution and food safety in the fish sector, including pollution sources outside the sector, will receive more attention worldwide. In this regard, institutional developments in the sector will be necessary to reduce poverty and address potential social impacts of increased global trade, such as the elimination of marginal and small-scale enterprises.

The open access nature of many fishing grounds means that the rights and responsibilities of resource users are not well defined and competition among fishers intensifies as the resource becomes scarcer. Even where clear laws and regulations that define rights exist, enforcement is a challenge for developed and developing countries alike, often resulting in conflicts among different user groups. In this context, fisheries resources are difficult to manage effectively and prone to the 'tragedy of the commons'. These issues are compounded by the subsidisation of distant water fishing fleets. Countries that do not subsidise their fisheries and restrain their total fish catch to maintain the resource lose the extra catch to countries that do otherwise. Competition from subsidised distant water fleets can make it economically infeasible for developing countries to expand their own fisheries and realise the full benefits of their jurisdiction over their 200-mile exclusive economic zone (EEZ).

2 BARRIERS TO INTERNATIONAL FISH TRADE

2.1 Tariffs

Historically, tariffs have been the principal means of protecting domestic producers from international competition. Although traditional barriers to trade (tariffs and quantitative restrictions) have been reduced by negotiations under the GATT, the issues of market access and trade liberalisation for fish commodities differ from most types of agricultural commodities or industrial products. Negotiations facilitated by the GATT succeeded in reducing average tariffs for fish by 25 percent. After the Uruguay Round, the average tariff on fish produce was 4.5 percent for developed countries and below 20 percent for developing countries. These initial reductions, however, were balanced by pervasive tariff peaks and tariff escalation that are predominantly applied to processed or value-added fish products in key import markets. FAO-Globefish (2000) found that such import duties continue to hinder processing and economic development of the fishery industries in many developing countries. Countervailing duties and the proliferation of non-tariff barriers have similar effects as they often constitute demand-side constraints which limit market access. Supply-side constraints act similarly and involve institutional constraints.

As mentioned earlier, import duties in developed country markets – especially tariff peaks and tariff escalation for certain fish products – continue to present barriers to processing and economic development in the fisheries industries of both developing countries and developed nations outside large trade areas, e.g. non-EU members. However, major importing countries such as Japan, the EU and the US have followed differential approaches towards fish products imported from developing countries that range from preferential rates and duty-free access for some countries to the near-total removal of tariffs for certain types of products, such as raw fish and fresh chilled and frozen fish.

Profiles of tariff structures vary widely among industrialised countries in terms of the level, transparency and the presence of tariff escalation (Table 3). Korea and the EU apply the highest duties and have the highest occurrence of tariff peaks, with 69 percent and 41 percent of tariffs higher than 15 percent respectively. The EU also applies tariffs greater than 15 percent to 5 percent of imports from developing countries. The US only has 4 percent of tariffs over 15 percent and Japan and Canada have no tariff peaks. Nevertheless, the EU and Korea have highly transparent structures, as tariffs are applied as ad valorem duties. The US and Japan have more complex tariff structures in comparison (Roheim, 2003). Export taxes are often the preferred instrument among various policy options to restrict exports. They are a credible policy, yielding the government some revenue while being transparent and simple to administer. Some countries meanwhile impose export bans, regulate exports through quotas and licensing, or monitor exports to ensure an adequate domestic supply of commodities at a reasonable price. In general, these are used to stabilise prices, influence resource allocation, alter income distribution outcomes, and/or increase fiscal revenue (Piermartini, 2004).

Globally, only three percent of fish imports are subject to peaks greater than 15 percent. The average tariffs for industrialised countries are lower than those of developing countries by approximately 6.2 percent for raw fish foods, 8.6 percent for intermediate seafood products, and 10.2 percent for processed seafood (Roheim, 2003).

Tariff escalation on certain products means that developing countries do not capture the increased profits from processing. However, improvements are occurring in this area and as a result significant quantities of whole frozen fish are being transported to developing countries for low-cost thawing, processing and packaging. Reducing tariff escalation will generate further opportunities for producing value-added fishery products and will provide a large potential for employment creation in developing countries. Exports of LIFDCs have

been locked in a narrow product-process specialisation over the past 25 years, primarily due to the inherent resource configuration, domestic economic considerations regarding labour absorption, and international tariff structures, which are largely dictated by the importing developed countries. Despite the existence of tariff escalation, the composition of fishery product exports of LIFDCs has shown a small but significant shift towards more processed products.

While tariffs on fish and fishery products are generally higher in developing countries, tariff structures vary significantly between countries. Average tariffs for developing countries are 19.4 percent for raw foods, 22 percent for intermediate products and 23.8 percent for processed food. However, countries such as Malaysia and India apply the highest level of duties to intermediate products. India, Thailand, Chile and Kenya have identical tariffs for all kinds of raw products. The latter three countries also have no tariff escalation and can be described as having transparent tariffs. Thailand has the highest consistent tariffs of 60 percent, followed by India, whereas Chile and Malaysia apply the lowest duty rates. In contrast, other countries differentiate between raw products and have more heterogeneous tariff systems. For example, Malaysia applies tariffs of 3 to 18 percent, Mexico 8 to 30 percent and India 15 to 45 percent. China is the only developing country with significant tariff escalation. This heterogeneous tariff structure poses a problem to the development of the South-South trade. (Roheim, 2003)

Developing countries have taken steps to reduce tariffs, particularly for the processing of fish. China, Thailand and the Philippines, for example, have reduced their tariffs by more than half. However, many developing countries are wary of implementing further trade liberalisation and tariff reduction because of structural rigidities and fears over the impact of trade liberalisation on their market share. Specifically, they fear that liberalisation could lead to a loss of domestic market share because of displacement from imports and of global market share because of the erosion of the tariff margins of preferential market access. Developing countries continue to rationalise higher tariffs on imported items such as fish, on grounds of significant loss of domestic markets by local producers who tend to be small-scale and semi-commercial operators compared to the their competitors in the developed countries who tend to possess significant advantages of technological efficiency and economies of scale. Countries are also wary of budgetary implications due to loss of revenue to reduced tariffs.

However, bound import tariffs in developed countries for products mainly imported from developing countries have been much lower than those of most product lines exported from developed countries. Bound tariffs are ceilings on customs tariff rates and are therefore difficult to increase (many developing countries do charge below their bound rates). The Uruguay Round increased tariff bindings substantially, thus promoting a substantially higher degree of market security for traders and investors (Table 4). In the Uruguay Round, the number of developing country exports with bound tariffs was increased from 21 to 73 percent, although for many countries this value was set above the current rate, providing some allowance for

Table 3: Average type of tariff in industrialised countries, by type of seafood

Type of Seafood	EU	Japan	US	Korea	Canada
Raw Fish	10.3	4.3	0.6	15.3	0.6
Intermediate Seafood Products	4.0	2.0	1.0	33.0	3.0
Processed Seafood	16.3	9.0	3.3	20.0	2.6

Adapted from Roheim (2003).

future increases (WTO, 2005a, b). Although in the Uruguay Round developing countries were given the privilege of higher tariffs and a longer timetable for reduction, developed countries are requiring a lowering of import tariffs in the NAMA negotiations in return for their reduction of tariffs and subsidies, especially on agricultural commodities.

Table 4: Percentages of tariffs bound before and after the Uruguay Round (1986–1994)

Country Category	Before	After
Developed Countries	78	99
Developing Countries	21	73
Transition Economies	73	98

Note: Values reflect tariff lines. Percentages are not weighted according to trade volume or value.
Source: WTO, 2005a, b.

2.2 Preferential Arrangements

Preferential agreements for lower tariffs and duty free access exist between many developed and developing countries, particularly with LIFDCs. These tariffs have often been negotiated under a variety of conventions and special co-operation agreements. These agreements include generalised systems of preference (GSP) and cover 80 percent of fish trade (Dey et al, 2005). Serious concerns have also been raised that overall tariff reductions would decrease the preference margin of those countries currently enjoying preferential access to some markets, thereby reducing their advantage vis-à-vis other developing countries (commonly referred to as 'preference erosion'). Given the current organisation of production, supply and market chains in international trade, some developing countries feel that tariff reductions will weaken their competitiveness and disproportionately benefit developed countries. This is a primary reason for disagreements surrounding the removal of tariffs (see section 5.3.1).

Most industrialised countries offer preferential access to developing country imports. The OECD estimates that weighted tariff averages for trade that are applied to seafood from developing countries (excluding LDCs) to the EU, Japan and the US are 7.6 percent, 4 percent and 3.6 percent, respectively. The comparable rates for LDCs are 0 percent for the EU and the US and 3.6 percent for Japan (OECD, 2003). In the EU, some 11 percent of nominal tariffs still exists for fisheries products though, because of various tariff concessions, the average tariff on fish products is actually 3 percent (Valdimarsson, 2003).

The EU has in place the following special exemptions:

1) **Africa, Caribbean and Pacific (ACP) countries**: All seafood products from the 77 ACP countries enter the EU duty-free. The most recent ACP-EU Agreement, signed in June 2000, called for the removal of trade barriers and granted certain concessions to ACP countries.
2) **General System of Preferences (GSP):** The generalised, non-reciprocal, non-discriminatory system of preferences scheme gives preferential EU market access to products originating in developing countries, to help the latter: (i) increase their export earnings; (ii) promote their industrialisation; and (iii) accelerate their economic growth. Under GSP schemes, selected products originating in developing countries are granted reduced or zero tariff rates over the MFN rates. LDCs receive preferential treatment for a wider coverage of products and deeper tariff cuts.

The recently-updated GSP provides an additional 5 percent tariff reduction for countries which meet additional environmental and labour conditions. It also has built in an expulsion provision for those countries that seriously and systematically violate minimum labour standards (EU, 2005).

3) **Everything But Arms Agreement (EBA)**: The EBA is an extension of the EU's GSP that was added in February 2001. The unilateral agreement gives the world's 49 LDCs zero tariffs with no quantitative restrictions on all products except arms (with transitional periods for sugar, bananas and rice), without reciprocity (FAS, 2003).

2.3 Non-Tariff Barriers to Trade

Experience has shown that as tariffs have been reduced, the importance of NTBs has grown (OECD, 2005). Major importing regions and countries have set stringent standards and regulations to cover trade in endangered species, labelling of origin, traceability, chain of custody, and zero tolerance for certain veterinary drug residues. Certain importers, such as the EU, are increasing the number of notifications of standards and technical regulations to the WTO. In 2003, the EU made 545 notifications for fish, crustaceans and molluscs compared to 480 in 2002 and 232 in 2001. These notifications accounted for almost one-third of all the EU food notifications (EC RASFF, 2003). The main exporting region affected by these EU requirements has consistently been Asia (particularly Thailand, Vietnam and India), followed by Africa and South America, accounting for 66, 18 and 11 percent of the cases from 1999–2002, respectively. The dominant cause in the past has been microbial, but chemical risks, such as heavy metal contamination and residues of veterinary medicinal products, are becoming increasingly important in the EU and Japan. In 2002, 65 percent of the border cases for fish products with the EU were due to chemical causes, 31 percent due to microbial, and 4 percent from other causes, predominately problems with certificates. Among the various product categories, shrimp garnered the highest number of notifications, followed by finfish (Ababouch et al., 2005).

The use of NTBs is the subject of negotiations in the Doha Round. The NAMA negotiating mandate in the WTO Doha Round includes a commitment "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. Product coverage shall be comprehensive and without a priori exclusions". In addition to these negotiations, NTB-related issues are to be addressed in the WTO rules with respect to anti-dumping, subsidies and countervailing measures.

NTBs can hinder developing countries' access to export markets, making it difficult for them to take advantage of the opportunities for economic development offered by trade. Failure to fulfil the requirements of EU standards for safety and quality has cost countries like Bangladesh and Kenya dearly, in terms of lost export earnings (Cato and Lima dos Santos, 2000). Predictability of market access is vital to developing country export interests. Many developed countries also have an interest in helping smooth trade, as they are increasingly reliant on imports. As a result, both parties want to have transparent rules that facilitate trade and bridge the capacity gaps that exist.

Overall, a lack of agreed standards, transparency and predictability in the implementation and verification of standards poses bigger problems than the ability and willingness of countries and producers to comply with the standards. To address some of these constraints, the Standards and Trade Development Facility (STDF) was set up as a global programme in capacity building and technical assistance to assist developing countries in trade and SPS measures established by FAO, the World Organization for Animal Health (OIE), the World Bank, WHO and WTO. More specifically, the STDF aims to assist developing countries enhance their expertise and capacity to analyse and implement international SPS

standards, improve their human, animal and plant health situation, and thus gain and maintain market access (STDF, 2006).

In addition to facilitating international trade, compliance with standards and technical regulations can have positive impacts on developing the fish industry in exporting countries, including better quality of fish and fish products available for domestic consumption, improved fish quality management, and enhanced export potential, favouring economic and social development. In the medium to long term, the sector appears to recover well after the implementation of standards and regulations, often with a smaller but better equipped processing segment, improved marketing strategy and strengthened institutions. Nevertheless increased polarisation, particularly related to the poor and vulnerable, may occur in the longer term.

2.3.1 Sanitary and Phytosanitary Standards

Sanitary and phytosanitary measures cover food safety and animal and plant health measures and involve inspection, examination and certification procedures. The application and measurement criteria for SPS standards vary across major importing countries and regions. SPS issues associated with wild-caught fish usually revolve around storage and processing. Currently, exporting countries face far more stringent SPS restrictions from the EU than from other markets. For example, between 1997 and 1998, the EU imposed bans on seafood imports from India, Bangladesh, Kenya, Madagascar, Mozambique, Tanzania, and Uganda, citing food safety concerns in processing or contamination prior to catch (Filhol, 2000). Recently, problems related to mercury contamination of certain species have also surfaced.

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, the EU decided to examine all shrimp products imported from China, Indonesia, Thailand, Vietnam and others because residual antibiotics were discovered in some products.

The EU continues to raise its SPS standards. For example, residue monitoring for veterinary medicines and heavy metal contamination, as well as more extensive labelling requirements, were introduced in 2000–2001. A 'zero tolerance' towards various residual antibiotics in food products was recently implemented. However, the EU delegates authority for the implementation and enforcement of its food safety legislation to exporting country authorities. These include measures prior to processing, which cover small-scale and non-

Box 1: The EU bans shrimp imports from Bangladesh

The shrimp export market in Bangladesh was worth around US$332 million in 2000, constituting 70 percent of the country's export of primary products (Rahman, 2001). The shrimp industry in Bangladesh employs over one million people and is targeted exclusively for export markets. The industry was able to burgeon due to a World Bank loan that encouraged private investment. Since 40 percent of shrimp exports was bound for the EU, a five-month ban on shrimp imports from Bangladesh imposed by the EU in 1997 due to the failure of the Bangladesh importers to meet EU safety standards had wide-ranging impacts and cost the country at least US$14.7 million in short-term losses (Cato and Lima dos Santos, 2000). The cost would have been significantly higher had Bangladesh not been able to divert much of the shrimp to other countries, such as the US and Japan, where safety standards were met. While the ban may have been justified in sanitary standard terms, it is argued that the lack of capacity to meet EU standards constituted a trade barrier (Rahman, 2001). In an effort to address the problem, special credit programmes were implemented with the support of the FAO, costing an estimated US$18 million initially and an additional US$2.4 million annually. This assistance resulted in the gradual lifting of the EU ban.

industrialised sections of the market. The resultant paper trails and other requirements pose a major challenge to small local industries in developing countries.

Box 1 outlines a recent example in this regard between the EU and Bangladesh. This example affirms the apprehension of LDCs regarding standards as a major market issue. In 2002, fish and fishery products represented the largest category (over 25 percent) of food safety and quality alerts in the EU. Aquaculture products were particularly targeted for veterinary drug residues and monitoring resulted in the banning of imports from several countries.

2.3.2 Technical Barriers to Trade

NTBs can also take the form of technical regulations, quality and composition standards, labelling, and source and origin information requirements (referred to as technical barriers to trade – TBT).

a) Certification and Labelling

The goal of eco-labelling programmes is often to create market-based incentives for better management of fisheries, by creating consumer demand for seafood products from well-managed stocks or from sustainable aquaculture. Certification schemes can either provide accreditation and allow the use of labels, or establish recommendations on best practices or codes of practice. Initially, such schemes concentrated on one area, such as 'dolphin-friendly' labels, which ensured that tuna are caught in a manner that does not harm dolphins. Their scope has subsequently become more ambitious and now covers several aspects of sustainability, production methods and traceability. There is a proliferation of schemes currently in existence with distinct (and not always transparent) criteria and assessment methods (Leadbitter, 2004).

The Marine Stewardship Council (MSC) scheme is the best-known example of an independent organisation certifying capture fisheries based on standards for sustainable management. It labels products judged to be sustainably fished, using an independent third party. There were 219 MSC-labelled products in the market as of August 2004, sold mostly in Europe (Kura et al., 2004). However, only a tiny proportion of the world's fisheries have been certified so far. MSC-labelled products are not yet available in sufficient quantities to influence consumer preference in a major way. As a result, certification has not yet achieved its potential as an economic incentive for improved fisheries management.

Under the current system, certification is voluntary and higher prices are possible, but at significant costs. This can pose a problem for developing country producers who cannot afford these costs and may lead to a two-tiered market, one for developed large-scale fisheries and the other for uncertified developing country products (Roheim, 2003). Issues regarding possible negative impacts of certification on developing country producers include: (i) legitimacy and credibility concerns since the schemes were principally designed by and for developed country large-scale fisheries and not small-scale tropical fisheries; (ii) feasibility and equity of certification in developing country situations (e.g. accessing credit, monitoring capabilities); and (iii) potential distortions to existing practices and livelihoods caused by price changes (e.g. gender distortions) (Gardiner and Viswanathan, 2004).

Eco-labelled products, though not yet prominent in any market, may become increasingly important as consumers refer to these standards in response to increasing environmental awareness (Roheim and Sutinen, 2006). There is also the risk that eco-labels may impose unjustifiable barriers to trade since the organisation and management of eco-labels are likely to be discriminatory in nature. However, there is currently a lack of internationally agreed guidelines on product labelling and certification, choice of information and transparency of process, the role of government in voluntary labelling and certification, and special requirements of developing countries in adopting eco-labelling of fishery products. As such, the relationship between WTO rules and voluntary labelling schemes, including organic and 'fair trade' labelling, needs to be clarified.

In March 2005, FAO adopted guidelines for the eco-labelling of fish and fishery products. The guidelines outline general principles that should govern ecolabelling schemes, including the need for reliable, independent auditing, transparency of standard-setting and accountability, and the need for standards to be based on good science. They also lay down minimum requirements and criteria for assessing whether a fishery should be certified and an ecolabel awarded, drawing on FAO's Code of Conduct for Responsible Fisheries (FAO, 2002c, 2005b).

Organic labels are not applied to wild-caught fish since the conditions they live in cannot be controlled. However, organic labelling is in place for farm-reared seafood in the EU and the importance of organic labelling in aquaculture is becoming increasingly recognised.

b) Traceability

Traceability (or 'product tracing') relates to the origin of materials and parts, the processing history, and the distribution and location of the product after delivery (ISO, 2000). The Codex Committee on General Principles (CCGP) refers to it as "the ability to follow the movement of a food through specified stage(s) of production and processing and distribution" (Codex Alimentarius Commission, 2004). It can be utilised in the food chain with safety (risk management), quality, bio-security or business management objectives (FAO-GlobeFish, 2004), as outlined below.

1) ***Safety:*** Safety concerns imply that unsafe products can be withdrawn and that post-market safety aspects can be distinguished. Regulatory traceability could be considered to be an SPS measure because it is not a stand-alone measure, but can be applied in the context of safety agreements.
2) ***Quality:*** Quality aspects can be used to avoid consumer deception on quality, e.g. nutritive or medical claims and fair practices. From this perspective and for specific regulatory attributes, traceability may be considered a TBT measure.
3) ***Bio-security:*** Food and fish traceability is required under the US Bioterrorism Act. Current fish and food inspection services in many countries may not have the competence to legally cover additional security aspects, such as police and military implications.
4) ***Business management:*** Business management can be associated with traceability to maintain quality, build business partnerships, optimise market, production and distribution, or integrate the industry horizontally and vertically. However, there are a number of practical issues associated with traceability, specifically with wild-caught fish since they are migratory and cannot be tagged.

In 2001, the European Union enforced a labelling regulation for fishery and aquaculture products, requiring identification of official commercial and scientific names, the origin of the fish and its production method (farmed or wild), to provide consumers with a minimum of information on the characteristics of such products (Moretti et al., 2003). As a consequence of these regulations, various labelling schemes from producers and distributors are now in place for fish products, primarily to promote resource sustainability, distinction of quality and product safety. Typically, such producers' or distributors' labels inform the consumer as to which aquaculture techniques have been used and which type of feed or raw materials have been used in the feed formulation.

Recent food scares such as BSE and the malpractices of some food producers have increased public awareness regarding both the validity of claims of food origins and the means of food production. The high financial value of fishery products could tempt unscrupulous producers and traders to commit fraud by selling fish products under false authenticity standards (Moretti et al., 2003). Traceability requirements can also be too costly for developing countries that risk reducing their market share.

New interest in organic fish products or 'natural' fish products is also particularly intense in aquaculture, although current schemes tend

to be complex and expensive and, so far, a 'physiological' incompatibility seems to exist between aquaculture and organic production of fish. Consumers are increasingly interested in 'natural' or wild fish products, because of reduced confidence in the quality and safety of farmed fish, as well as concern about environmentally-friendly production methods. As such, consumers may be willing to pay higher prices for organic, eco-labelled or country of origin labelled seafood products, making investment in traceability regulations more worthwhile (Moretti et al., 2003).

c) Country of Origin Labelling

Country of origin labelling (also marking the type of production) is required in the EU. The Country of Origin Labelling Law (also known as the 'COOL Law') came into effect in the US in April 2005. The new rule stipulates that the label must contain information such as whether the product is "farmed," "cultivated" or "caught in the wild," the country where it was processed and the commercial name of the seafood species. This will have effects similar to those of labelling and traceability requirements discussed above. The COOL Law does not apply to processed seafood. However, very little is known about the exact costs of COOL and what it will take to comply with a mandatory program (Grier et al., 2002).

2.3.3 Anti-Dumping Measures

Dumping is defined in the WTO Anti-Dumping Agreement as the exporting of produce at less than production cost to the material detriment of competitor industries in the importing country. Under the Anti-Dumping Agreement, WTO Members can impose anti-dumping measures (ADMs) on other Members after an investigation is carried out, if it is determined that: (i) dumping is occurring; (ii) the domestic industry producing the 'like' product in the importing country is suffering material injury; and (iii) there is a causal link between the two. The Anti-Dumping Agreement also includes detailed procedural rules for initiating and conducting investigations and imposing ADMs. One of the complex issues involved in determining whether a product is being dumped at the 'normal value' of that product. There are cases, for example, when no sales may occur in the domestic market and, thus, it is not possible to determine the normal value in the domestic market. While the Anti-Dumping Agreement contains alternative methods for constructing the value on which to make a determination, the procedures for doing so are complex and, frequently, controversial.

In the past, ADMs have rarely been used in international fish trade, although the US has been fairly active in pursuing anti-dumping investigations. With growing volumes of farmed and internationally-traded fish, bivalves and crustaceans, as well as low priced imports, ADMs are likely to increase. While, in the past, fish processing in developing countries, such as tuna canning, was the focus of attention, aquaculture is now dominating fisheries-related ADM investigations. For example, the present complaint in the US regarding low-cost farmed shrimp imports has been brought to the WTO Dispute Settlement Body under the Anti-Dumping Agreement (see Box 2).

There is growing concern that countries seeking to protect failing local industries are turning to anti-dumping petitions to erect trade barriers for seafood imports, often to the detriment of the developing export market. Food processors and consumers in the challenging country will also suffer. ADMs are often inequitable and counter-productive; their overall impact is to reverse current and future fisheries trade liberalisation measures (Bostock et al., 2004). Even the threat of an ADM investigation can negatively affect exporters. Moreover, anti-dumping measures can be highly political (see Boxes 2 and 3).

Box 2: The Shrimp Case in the US

In late 2003, the US Southern Shrimp Alliance (SSA) filed a petition to the US Department of Commerce and the US International Trade Commission (ITC) alleging that exporters from Brazil, China, Ecuador, India, Thailand and Vietnam were selling shrimp at lower prices than in their home markets and requested anti-dumping duties of up to 200 percent to be placed on imported shrimp from these countries. These anti-dumping duties would have a large effect both on prices and volumes since imported shrimp is the most popular seafood product in the US, with almost 90 percent of US shrimp consumption sourced from imports.

In 2004, the ITC stated that there was reasonable indication that the domestic industry had been "materially injured or threatened with material injury by reason of imports of certain frozen and canned warm water shrimp and prawns" from these countries. Coleman (2005) reported that this determination meant that tariffs of between 4.48 percent and 25.76 percent were collected on Vietnamese shrimp and up to 112.81 percent on Chinese imports effective July 16, 2004.

The affirmative preliminary determination that shrimp imports from Thailand, Brazil, India, and Ecuador were also being sold below fair market price followed that against China and Vietnam. The tariffs in these cases were not set as high as some had expected, with 67 percent for Brazil being the highest and most other providers from the other four countries facing only about 10 percent tariffs (Coleman, 2005). This included Thailand, which supplies almost a quarter of the US shrimp consumption.

In November and December 2004, Ecuador and Thailand requested WTO consultations with the US concerning provisional anti-dumping measures imposed by the US on certain frozen and canned warm water shrimp from their countries. Brazil, China, the EC, India and Japan also requested to join the consultations. Ecuador alleged that the method used by the US to calculate the duties contravenes WTO rules (ICTSD-IUCN, 2005).

Major disruptions can be expected in US and foreign markets, if these duties continue to be imposed. In the short term, prices will rise for domestic US consumers and supplies are expected to decline. In addition, supplies directed elsewhere will lead to falling prices in those markets. This will also imply significant revenue loss to exporters.

Box 3: US-Vietnam Catfish Anti-Dumping Disagreement

Fish and shrimp play a central role in Vietnam's export-led economic growth. The aquaculture sector ranks third among the country's leading staples, after crude oil and textiles. Sales of aquatic products topped US$1.5 billion in 2002. Vietnam exported 13,500 tons of frozen catfish fillets to the US market worth US$38 million in 2001 and 18,300 tons valued at US$55 million in 2002. This boom started in 1999 when raw seafood tariffs dropped to zero in the US.

The Catfish Farmers of America (TCFA), which represents US catfish farmers and processors, complained that Vietnam had captured 20 percent of the US$590 million market for foreign catfish fillet by selling at prices below the cost of production. The TCFA lobbied the US Congress to declare that out of 2,000 catfish types, only the US-born family named *Ictaluridae* could be called catfish. Vietnamese producers had to market their fish in the US by using the Vietnamese terms of *basa* and *tra*.

Later, the US Department of Commerce initiated an anti-dumping case against Vietnamese catfish and declared Vietnam a "non-market" economy, where the government seeks to determine economic activity largely through central planning instead of market forces. The US Commerce Department ruled that Vietnamese fillets had been "dumped" or sold in the US market at unfairly low prices. The US ITC found that the importation of Vietnam's catfish had caused losses to US producers and subsequently imposed higher tariffs. Ten companies that export frozen fish to the US are now subject to duties ranging from 38–62 percent. US buyers of Vietnam's fish exports must now post a bond equal to the tariffs on the specific product.

Source: Mydans (2003)

3 DOMESTIC CONSTRAINTS RELATED TO INTERNATIONAL FISH TRADE

The ability of developing countries to reap the full benefits of increased liberalisation of fish trade and to mitigate its harmful effects is constrained by several factors. Many of these can be seen as 'supply-side challenges' relating to national policies, governance, domestic infrastructure and institutional arrangements. These arrangements are in the context of special characteristics of production, supply chains, trade policy processes and policy environments in developing countries. While some countries suffer from basic infrastructural problems such as hygiene and awareness, others are constrained by their ability to respond proactively to non-tariff barriers such as labelling requirements. This section discusses the major areas of concern.

3.1 Capacity, Infrastructure and International Trade

3.1.1 Infrastructure in Exporting Countries

Over the last few years, the international consumption of fish and fishery products has been strongly influenced by improvements in transportation, refrigeration, marketing and food science and technology. This, in turn, has led to significant positive developments in efficiency, cost, safety, product choice and quality. While improvements in transport and other relevant supply chain technologies in developed countries have had a large positive effect on fish trade, such improvements are still sorely lacking in most developing countries, many of which suffer from poor road conditions and other transport infrastructure problems (including a lack of high quality water and ice, irregular electricity supply, poor pre-processing phase infrastructure and transport facilities). Fishery infrastructure is broadly defined to include fish landing centres, processing facilities, link roads, electricity, potable water supply, housing, as well as sanitary and environmental engineering works.

Infrastructure can be divided into 'livelihood-related infrastructure' and 'trade-related infrastructure,' although there is an inevitable overlap between the two. Trade-related marketing infrastructure, such as clean landing centres, good coastal roads, reliable electricity supply, telecommunications and efficient road transportation, contributes to the overall development of coastal areas and the country as a whole. It also makes significant income-enhancing contributions to the food security of fishers and fish workers. Since fish is a highly perishable commodity, the quicker it is preserved or processed, the greater the reduction in post-harvest losses. Improved transportation infrastructure also ensures that fish consumption is more spatially spread out and not confined to the coastal tract and urban centres.

Domestic fish market infrastructure is a necessary condition for fishers to obtain fair returns and for consumers to get good quality fish at affordable prices. In countries with a large domestic market for fish, it makes no sense to perpetuate a dichotomy between the quality and effectiveness of domestic marketing on the one hand, and the export marketing on the other. The narrower the gap between the two, the greater strides a country can make in international trade. A sound and viable trade infrastructure for the domestic market is the foundation for enhancing the capacity of a country to trade internationally.

Until recently, the investments made by bilateral and multilateral aid agencies to facilitate fish exports from developing countries have emphasised trade-related infrastructure. However, improvements in livelihood-related infrastructure, such as good water, environmental sanitation, housing and education facilities are also of vital importance. The long-term common interests of consumers at the global level and producers at the micro level overlap

here. Importing developed countries also have an interest in ensuring that this materialises. Hygienic coastal areas and other fishing regions in developing countries ensure that fish exports are not prone to numerous disease-producing micro-organisms. From the point of view of the developing countries, improvements in livelihood-related infrastructure reduce the risk of rejection of their fish exports and subsequent import bans due to health and safety scares.

3.1.2 Costs and Benefits of Compliance with Standards

Complying with international and export market standards implies significant costs and benefits. The costs, arising at different points of the supply chain, can be classified as direct and indirect, and recurring and non-recurring. For example, production costs can increase considerably at landing and aquaculture sites, while substantial processing costs can result from upgrading of buildings, monitoring, purchasing new equipment, and training and employing qualified staff. The industry may incur costs due to the need for increased inspection, certification capacity and quality of services. The entire supply chain may also incur costs for updated quality systems, support for their chain partners, risks of product bans, rejection of products and re-packaging. Costs are often more apparent than benefits, which may be long-term, intangible or accrue outside the industry.

The costs vary widely on a case-by-case basis between countries and among products and facilities due to differences in historical factors and strategies of compliance. For example, Nicaragua and Bangladesh upgraded their facilities to comply with EU standards, and respectively spent US$560,000 with annual maintenance costs of US$290,000, and US$18 million with annual maintenance costs of US$2.4 million. These initial costs represented 2.3 and 0.61 percent of their respective export values, which implies that compliance brought about large net benefits. On the other hand, Bangladesh and India have both suffered trade losses due to SPS issues related to infrastructure and hygiene in fisheries establishments (Delgado et al., 2003a).

Poor safety standards exert large costs in two ways. First, there are costs associated with fish spoilage, product rejection, detention and recalls, and decreased capacity due to temporary or long-term factory closures, which result in adverse publicity for the industry or even the cessation of exports. Second, fish-borne illness can cost billions of dollars because of high adverse health effects, loss of productivity and accompanying medical expenses. Therefore, safety and quality control is in the interest of governments, public health authorities, producers, processors and exporters.

The benefits associated with high safety and quality standards can be substantial. New SPS-based requirements have created an employment niche within the fish processing industry for a specialised group of workers, such as fish technologists, veterinarians and hygienists, often with attractive wages and social benefits. Increased market access due to compliance with one country's standards may serve as a positive factor for other importers. At the top end of the market, access may imply higher prices and more value-added production. Improved image as a trusted supplier reduces risks, lowers price competition and encourages joint interest in the supply chain. For example, to comply with EU hygiene standards, Indian processors invested US$13.5 million or 1.7 percent of the value of exports over three years and did not suffer the restrictions that their Thai and Chinese competitors did in 2002 and 2003 (Dey et al., 2005). Many of the necessary investments for compliance in different areas overlap (e.g. health and safety improvements) and hence also improve traceability and chances of eco-certification, thereby lowering overall costs. Complying ahead of other companies and timelines likewise allows increased flexibility and reduced risks of large financial losses. Overall, compliance may lead to higher efficiency – as it will improve productivity, reduce production losses and market risks – and higher infrastructure standards.

Distributional and welfare effects may occur through direct changes in labour, product and land markets, or through positive or negative

secondary effects. Not all benefits or costs are distributed equally. For example, larger companies do have an incremental advantage since they can benefit from economies of scale (see section 3.1.3), have better access to information and can take advantage of well-established reputations.[6] There is little doubt that stricter enforcement of SPS and TBT regulations, particularly at the early stages of the supply chain, can marginalise small producers from export markets (Bostock et al., 2004). Indeed, there is some evidence that two-tiered markets may emerge, i.e. larger industries that are able to comply will tend to supply higher-end markets, while smaller companies and suppliers with insufficient capital investment to implement appropriate management systems will tend to supply local markets and countries with less stringent requirements (Manarungsan et al., 2004).

Where the costs of changes and investments are very high, companies are rarely faced with all-or-nothing choices. Suppliers need to weigh the costs and benefits associated with participating in different market segments; countries that have less stringent standards or longer implementation times can be targeted for export if necessary (World Bank, 2005). In this way, the norm of differential application of standards may be a positive factor, especially for the expansion of the South-South trade.

Indeed, SPS and other requirements should be addressed in the broader context of competitiveness, as progress in certain aspects such as quality control and logistics management may be adequate to satisfy SPS requirements. This is likely to continue as a result of an emerging tendency, particularly in the private sector, to package together safety, quality, and environmental and social standards (World Bank, 2005).

Current mounting concerns on compliance with increasingly stringent quality and safety standards revolve around two important issues: (i) that they will undermine the competitive advantage already gained by many developing countries; and (ii) that they will result in insurmountable barriers to trade for new entrants, especially since regulations often shift the burden of responsibility to the exporting processor or trader. These concerns are associated with: (i) the discriminatory application of standards; (ii) a lack of administrative, technical and other capacities of developing countries to comply with standards; (iii) associated costs that may undermine the advantage of developing countries in international trade; (iv) institutional weaknesses that marginalise weaker economic players, including smaller enterprises; and (v) inadequate support for increasing capacity in this area.

3.1.3 Economies of Scale

Economies of scale and costs in meeting safety standards vary across countries and among individual processors or exporters within each country. Evidence suggests a higher unit cost of compliance for small-scale producers. Issues of scale therefore need to be addressed by appropriate government policies which link small-scale producers and provide technical assistance, investment opportunities and appropriate institutional arrangements.

3.2 Institutional and Governance Issues

3.2.1 Policy Awareness of Fisheries Contribution

The fisheries sector is particularly important to a large number of countries where it makes significant contributions to both exports and domestic nutritional intake. These benefits, however, are not generally reflected in national policies due to oversight, such as underestimating the importance of small-scale, artisanal and subsistence fishing. In addition, national accounting practices often result in the undervaluation of the value-added from fish processing, which is counted as part of the food processing sector and not the purview of fisheries. National income accounts worldwide also tend to disregard the valuable contributions of subsistence fishing and are unable to capture subsistence consumption in nutrition surveys,

which assess household diets only in terms of purchased food commodities.

3.2.2 National Fiscal Arrangements

For many developing countries, tariffs contribute a significant amount to government revenues that support development expenditures, especially since poorer countries tend to have low incomes and weak tax systems. During 1991-2001, import duties represented 15 percent of government revenues in developing countries and 34 percent in African LDCs. As such, tariff reduction can have serious implications, especially for LDCs (ICTSD and IISD, 2003).

The costs associated with restructuring government revenue sources (such as setting up tax collection institutions) are seen as significant constraints and perhaps even unaffordable adjustment costs for LDCs. This problem may be compounded by tax evasion, either by under-reporting foreign exchange earnings from exports, or not recording the quantity and type of fish imported. The fear of attracting legal complications or having problems associated with formal registration and licensing often prevents proper reporting of the number of workers in fish processing plants.

3.3.3 Domestic Government Policies

Domestic trade policies in developing countries often lag behind changes in international trade rules and agreements or changes in the technology and resource availability. Import and export policies are also not necessarily aligned. As a result, the trading environment suffers from structural rigidities. For example, in the Philippines, export restrictions on milkfish fry designed to protect overexploitation of wild-captured milkfish fry resources continue to restrict local milkfish hatchery operators from producing milkfish fingerling for export as bait in tuna fisheries in the Pacific Ocean. As a result, the market is now captured by the neighbouring countries such as Indonesia and Taiwan. In addition, these countries also seized the economies of scale in the hatchery production, enabling them to export hatchery-bred milkfish fry to aquaculture producers in the Philippines.

In addition, many developing fishery nations fail to promote national policies that uphold certain minimum standards of living for fish producers and workers, and ensure their basic health and safety through measures such as minimum wages, infrastructure and facilities. Very often, government infrastructure support and incentives go to the processing industry or exporters instead of the primary producers or fish workers.

3.2.4 Resource Management

Developing countries invariably lack effective resource management. As such, trade-induced demand can lead to over-exploitation and environmental damage. The existence of EEZs has increased the international responsibility of national governments for resource management, especially due to the trans-boundary nature of many resource stocks (Ahmed, 1999). Weaknesses in property rights, lack of strong institutional set-up and rent dissipation are common concerns for effective resource management. There are also issues related to weak governance, including the capability to design, implement and monitor quality and safety compliance, which are important because the lack of a robust regulatory framework is a threat to trade and increases the risks of illegal fishing (Leadbitter, 2004).

Fiscal reforms can be used to improve management to ensure that the resources are not over-fished. For example, the allocation of permanent, enforceable and tradable fishing rights is now generally accepted as an enabling tool for sustainable fisheries management. These instruments are typically politically unpopular and require a good understanding of the trade-offs between efficiency and equity/welfare. However, if they create rents (i.e. through trading), novel fiscal arrangements combined with appropriate management instruments can be used for pro-poor policies, fisheries management, capacity building or investment, i.e. to redistribute wealth created by the fisheries.

3.3 Bilateral Fisheries Access Agreements

Developing countries that have been unable to utilise their fisheries resources have negotiated access agreements with third parties (Mbithi Mwikya, 2006). The first such agreement occurred between the EU and Senegal in 1979. Bilateral fishing agreements are part of the trade and development agreements between the EU and ACP countries, accounting for one-third of the EU fisheries budget of around US$400 million in the late 1990s. These agreements allow EU fishing vessels to gain access to ACP waters. Through the EU-ACP Cotonou Agreement, products from ACP countries enter the EU duty free. For example, during 1999–2000, the EU had agreements with 20 different nations, with a total value of over EUR 400 million (OECD, 2003). Spain is the dominant EU beneficiary, accounting for 82 percent of the EU member states' value of fish production arising from EU-ACP bilateral trade agreements, gaining large profits, employment and fish supplies.

However, the nature of these agreements precludes the developing countries from the gains of an otherwise competitive international market. Often the exact quantity and quality of the catch by foreign fishing vessels are not regulated in a transparent manner, leading to loss of resource rent and long-term damage to resource sustainability and productivity. Several key concerns about these fisheries agreements have been raised, mainly related to the possibility that developed countries are mining the host countries' resources for short-term profits at the expense of future economic development and sustainable fisheries management. These concerns include the following (Kaczynski and Fluharty, 2002):

- Depleting fish stocks, often beyond the maximum sustainable yield. Many host countries have placed no management restrictions or are unable to monitor or enforce them. As foreign distant water fishing fleets hold no long term access rights, they have no incentive to restrict their catches, which may in the long term threaten the future of fisheries in the host country.
- Overcapacity of foreign fleets is further encouraged by subsidies from their governments, which lower the costs for EU fleet owners and make it much harder for host country fishers to compete with EU fleets in the market.
- Many access agreements involve sums of money that are much smaller than the associated gains that the foreign fleets obtain and are therefore not reasonable. For example, the compensation Guinea Bissau received for issuing licenses to French and Spanish fleets in 1996 was less than 1 percent of the estimated market value of the tuna harvested from its waters.
- Marginalisation of local artisanal fishers, as larger fleets take large catches with large-scale commercial boats, such as trawlers, which can cause long term ecological damage.
- Food security can be threatened by declines in fish stocks due to non-transparent nature of fishing and lack of surveillance of the resources under bilateral agreements.
- Fish species can become too expensive to be caught locally and foreign fleets may process catches elsewhere. This implies that the host country has no opportunity to gain from the associated value-addition locally.
- Many vessels illegally encroach on the grounds within a few miles of the coast where local fishers operate, creating conflicts between foreign fleets and local fishers.
- Payments for access rights and the associated economic benefits rarely reach coastal communities, which often rely heavily on fishing for food and income since they are rarely supported for management or investment of domestic fisheries or processing infrastructure.

Access agreements would be less harmful if tariff structures (e.g. low tariffs) encouraged processing and value addition in the host

countries to bring significant economic and welfare benefits, as opposed to the current practice which encourages processing in developed countries due to the existence of high tariffs (tariff escalation) on processed products.

A new age of Fisheries Partnership Agreements is being negotiated between the EU and ACP countries to integrate sustainable fisheries objectives with national development strategies (Commission of the EC, 2002). The Agreements focus on development assistance through joint ventures, and include funding for fisheries research and management, training for fishery managers and grants to small-scale fishing (Kaczynski and Fluharty, 2002).

4 IMPACTS OF FISH TRADE LIBERALISATION

Increased liberalisation of trade through the removal of tariffs and non-tariff barriers will have multi-dimensional effects: significant impacts on foreign exchange earnings, employment, profitability, social aspects and the environment. These income and livelihood effects will differ significantly depending on various factors, including the heterogeneity of fishers and fish workers, method of production (i.e. capture or aquaculture), domestic fisheries management policies and country-specific social, cultural, economic and political factors. Nevertheless, generalised trends associated with the social and economic costs and benefits as well as on resource sustainability and productivity of trade liberalisation can be identified. This section discusses these impacts in turn.

4.1 Socio-Economic Impacts of Trade Liberalisation

4.1.1 Socio-Economic Benefits

It has been argued that trade is good for economic development and can bring benefits to many people (Leadbitter, 2004). In particular, some say that specialisation in areas where a producer nation has comparative advantage can potentially generate higher economic growth, which can be used to alleviate poverty, while reducing prices and creating more choice for consumers (Deere, 2000). A World Bank study found that during the 1990s per capita income in developing countries which globalised (e.g. China and India) grew three times faster than the per capita income in other developing countries (Dollar and Kraay, 2001).

The immediate economic impacts of trade liberalisation in fisheries are considered to be notable for fish-exporting developing countries, where it can serve as a significant contributor to employment, income and economic growth, including increased investment in the production and processing of fish and fish products, and may thereby support poverty reduction strategies in many LDCs. Tariff liberalisation can also have significant positive impacts on developed country importers of fish products through reductions in prices. In addition, the global regulatory harmonisation of sanitary, phytosanitary and other non-tariff barriers to trade encouraged by the opportunities offered by trade liberalisation can lead to increased investment in and scrutiny of such measures in both developing and developed countries, with positive effects on consumers. The reduction of variation in tariff rates used by different countries on different products is also more equitable, will bring harmony to the tariff structure, and remove skewed distribution of tariffs. However, the reduction in countries' policy space to adopt particularly high tariffs may have adverse effects on their ability to use such tariffs as a way to protect the environment, promote value-added fish production or fund government social programmes.

It should be noted, however, that the positive effects of trade in developing countries do not immediately trickle down to the poorer segment of the population unless supported by proactive measures, including through financial governance. Governance, therefore, is central to managing the effects of trade (see section 3.2).

4.1.2 Socio-Economic Costs

Whereas trade may increase food security and promote economic prosperity in general, it may have serious negative impacts on welfare in particular locations and groups of people (Kurien, 1993). Local deleterious effects can include reduced fish supply for consumption, which can affect food security in areas with few natural food sources, and higher domestic prices of fish due to excess demand, particularly affecting those who spend a large proportion of their income on food. Indirect effects can include competition from artificially low-priced fish due to subsidies in exporting countries, and environmental degradation from aquaculture or harmful technologies, such as trawling, seriously impacting long-term food security and

incomes. Fish production for export can also divert government and foreign investment and other resources (e.g. fish stocks) away from fish for domestic markets, which in turn can displace fish workers from their traditional livelihoods. Trade-induced changes in technology and infrastructure can also have negative impacts on livelihoods. Marginal farmers and small-scale fishers and fishworkers and women are the most vulnerable segments of population whose livelihoods might suffer from a liberal trade that causes dislocation and displacement. Women who are traditionally engaged in the processing and trading of fish may be displaced due to shorter supply chain under export-oriented fishery regimes. These impacts can compound the often poor conditions of fishing communities, where malnutrition problems, low standards of living, high dependence on fish as a traditionally cheap but highly nutritious food are known to proliferate (Kent, 2003). It should also be noted that governments do not always use the profits from fishing to improve domestic production and increase food security or to minimise conflicts between local and foreign fishers over access to fisheries to offset these negative effects.

Trade liberalisation can also have negative impacts on producers in exporting countries. Significant costs related to facilities upgrading can be incurred by the fishery sector when confronted with expensive export bans. For example, processing factories in developing countries incurred costs in meeting the Hazard Analysis Critical Control Point (HACCP) standards to obtain licenses for exports to the EU. If the costs of liberalisation result in the collapse of fisheries, this will have long-term and possibly irreversible negative effects on producer and consumer welfare.

4.1.3 Public Sector Policies and Vulnerable Groups

Different political choices can lead to promoting international trade, raising foreign exchange earnings, exporting only products that give higher profit margins, and generating higher earnings for unorganised fish workers. However, unless there is a radical change in the structure of trade channels, particularly at the end closest to the fishers and fish workers, there is no possibility for export dollars to reach those most in need of improved food security. Due to their weak bargaining power, small-scale fishers and farmers do not benefit from higher prices in the international market. Public sector policies and public good support such as market access infrastructure and facilities, and market intelligence and extension services, can make large improvements in the trade patterns in which the poor are involved. In principle, transfer payments can compensate for this negative effect, although these will be implemented with much difficulty since the poor, often politically weak, have limited ability to press for such payments.

Similarly, most aquaculture production in LIFDCs is based on the culture of low-value freshwater finfish in inland rural communities within semi-intensive or extensive farming systems that use moderate to low levels of production inputs. These systems produce large quantities of affordable food-fish for domestic markets and home consumption (FAO, 1996). In many developing countries, however, public policy focuses mainly on intensive large-scale operations of high-value species at the expense of traditional fishers and fish farmers. Since liberalisation may divert fish products and their inputs into markets with higher purchasing power, there is an urgent need to ensure the continued production of low-value species for domestic consumption, possibly through alternative product, market, infrastructure and policy support (Kent, 1995).

The increasing exposure of small-scale producers and processors to the costly standards and food safety requirements of international trade implies their need for support to compete effectively in the world market (Ahmed et al., 2003). Many developing countries, however, lack the infrastructure and extension services, as well as the legal and institutional frameworks necessary to promote access and user rights of the fisher community.

Finally, movement towards sustainable trade will require that employment and social security

conditions of fish workers be greatly enhanced to protect them from negative trade effects. This, in turn, requires the strengthening of national labour legislation and social welfare measures in keeping with international standards. Appropriate forms of producer organisations and supportive legal measures to strengthen fishers' rights (e.g. 'right of first sale' legislation) may also be desirable.

4.2 Impacts on Resource Sustainability and Productivity

4.2.1 Resource Sustainability

The impact of trade liberalisation on resource sustainability is a major concern for policy-makers dealing with market access and fish trade. Unlike other highly-traded agricultural commodities, almost 70 percent of tradable fish is still obtained from wild harvest, putting severe pressure on resource sustainability. Trade-induced demand is viewed as one of the main reasons for increased fishing pressure in developing countries. Excessive removal of target and non-target species has led to overexploitation of specific fish species, and to a wider ecosystem impact on predator-prey relationships and the community structure. In most fisheries, we now observe less of the long-lived species and more of the short-lived opportunistic ones (Brown and Ahmed, 2004). Increasing trade is also a major reason behind the expansion of live reef food fish (LRFF) fisheries in the Indo-Pacific region, resulting in the over-fishing of groupers, the most desired fish species in the LRFF trade (Sadovy et al., 2003).

Emphasis on higher export earnings from fish may make domestic fish resources, especially high-value species in developing countries, more vulnerable to overexploitation. Efforts to recover stocks that have already deteriorated may be sacrificed for short-term economic gains. The open access nature of many fisheries provides countries with perverse incentives to over-fish, and subsidies aggravate this pattern by artificially lowering production costs.

Questions are increasingly being raised as to whether developing countries are mining their resource stocks and the environment in pursuit of immediate gains from higher demand for fish and sea products in developed countries. This is especially the case where access agreements involve fees which comprise a small percentage of the value of the landed catch. The biomass of most fish populations has reached 20 percent of pre-fishing levels within 15 years; that of large predatory species is now only 10 percent of pre-industrial levels (World Bank, 2004). However, many experts consider that the root cause of the crisis is a failure of both perspective and governance (Pew Oceans Commission, 2003). As such, "the world's fish sector may become a victim of its own success" (Delgado et al., 2003a, p1).

Forecasts of the impact of trade liberalisation on resource sustainability are hampered by the lack of empirical evidence on the effects of trade flows and the potential application of trade rules on fish, fish products and services, sustainable fisheries and marine ecosystems; and by the limited knowledge on the structure of fisheries markets and of the links between market structures, prices, trade liberalisation and sustainability issues. The OECD (2003) predicts that liberalising trade through further removal of trade barriers will increase prices in the exporting country and lower prices in the importing country until a new equilibrium is reached. The magnitude of these changes will depend largely on the management system in place. If an open access system exists, exporting efforts will increase, resulting in the decline of fish stocks in the short term and possibly loss from trade in the longer term. In contrast, the importing country will reduce fishing efforts in the short term, which is expected to lead to a 'double dividend' as gains from decreased prices are realised, resources are transferred to higher yielding uses, and fish stocks recover in the longer term. The predictions are fairly similar for countries where the catch is controlled, although exporting countries may receive small gains from trade because there are no constraints imposed on individual fishers, leading to high levels of capitalisation

and effort. If both exporting and importing countries have efficient management systems in place, then both countries can gain from trade, similar to when trading in agricultural products.

Trade liberalisation *without* proper resource management will lead to further depletion of natural resources and degradation of the environment. With no coherent and comprehensive management for fisheries in most developing countries, there is hardly any provision and institutional structure to charge user costs for unpriced resource stocks. IUU fishing is increasing and its products are entering international markets. Trade reforms that encourage effective management systems are, thus, urgently needed. Failure to achieve this will result in "environmental despoliation, diminishing economic returns and increasing threats to food and livelihood security" (Bostock et al., 2004).

The OECD (2003) identified six cases where market liberalisation could impact supplies and consequently trade and resources: aquaculture; shared stocks; high seas fisheries not subject to management; fisheries under bilateral access agreements; underexploited fisheries; and multi-species fisheries. The study recommends that policy-makers pay particular attention to these cases since they represent situations where "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" (p38). Evidently, the links between the international trading regime, national governance and management systems aimed at sustainable exploitation, particularly in the six cases noted above, need to be better understood.

4.2.2 Impacts on Productivity – Growth of Aquaculture

International trade has certainly brought about significant growth of aquaculture. Aquaculture production that targets international markets has been attributed with rising farm income and wage earnings in rural Vietnam (Bostock et al 2004). The backward (e.g. hatcheries, nurseries, and seed, feed and input deliveries) and forward (e.g. harvesting, post-harvest handling, processing and marketing) linkages in aquaculture can create a substantial amount of labour demand.

On the other hand, trade-induced aquaculture development has been associated with environmental problems, such as clearance of mangrove forests and disease outbreaks reaching wild stock. With demand for fishmeal increasing with aquaculture, species such as herring and anchovies may soon be over-fished. While providing an alternative source of supply of seeds for aquaculture, the collection of fry and juveniles for grow-out operations has also put significant pressure on the population of a number of species, such as grouper and shrimp. In 2001, aquaculture used 35 percent and 57 percent of the global fishmeal and fish oil supply, respectively (Delgado et al., 2003a). There are also similar concerns with the knock-on ecosystem effects of the future use of krill as food (Parkin, 2003). Aquaculture of farmed shellfish requires unpolluted areas and is likely to be strongly influenced by SPS and TBT concerns in the future. Issues of genetic modification may also become increasingly important. Hence, the growth in aquaculture has added to the complexity of the management of wild fish stocks, due to its interaction with capture fisheries and the coastal environment.

4.3 Conclusions on the Impacts of Fish Trade Liberalisation

While reduction of trade barriers normally benefits both importers and exporters, this may not be the case in fisheries where management systems, prevalence of subsidies, and level of fishing will determine the extent to which market supplies change. To analyse the impacts of market liberalisation, policy instruments need to be carefully analysed, considering the specific fisheries situation, i.e. management framework, exploitation, import and export

level. To maximise welfare gains, policies would need to concurrently target market liberalisation and improvements in fisheries management. The full benefits of market liberalisation can only be achieved without compromising sustainability if proper fisheries management schemes are in place and if concurrent national policy reform is carried out to protect vulnerable groups and to enable larger investment in capacity and infrastructure (OECD, 2003). Increased trade can bring increased financial resources that can enable the implementation of sustainable management programmes.

5 FISH TRADE AND THE WORLD TRADE ORGANIZATION

The WTO is the international organisation that oversees trade rules and multilateral trade relations between countries. Over the last 50 years, there has been an enormous growth in global trade and economic growth under the GATT and the WTO. While earlier rounds primarily involved removal of tariffs, the last trade round, called the 'Uruguay Round' (1986 to 1993), expanded the GATT system beyond goods to include, among others services, intellectual property, SPS and TBT standards, safeguard and anti-dumping measures, and established the WTO. The WTO is currently negotiating new round of trade talks called the 'Doha Round'.

Currently the WTO has 149 Members, accounting for 97 percent of world trade, with an additional 30 countries negotiating membership. Over three-quarters of WTO Members are developing countries and countries in transition to market economies. With China's entry in 2001, all major fishing nations are now WTO Members (Box 4), except Russia and Vietnam who are in the process of negotiating membership.

Box 4: China and the WTO

For the first time in 2002, China (excluding Hong Kong) has now overtaken Thailand as the world's largest exporter of fish and fisheries products with US$4.5 billion worth of exports or roughly eight percent of the world total of US$57.6 billion. China produces more than 40 million tons per year, accounting for 30 percent of total world production, of which 27 million tons (68 percent) is from the aquaculture sector, outsizing that of any other country in the world. China has also become a major fish importer and is ranked as the 8th largest in the world. In fact, the country's fish imports are now growing faster than its exports when just five years ago it did not even figure among the world's 15 largest importers.

China has also developed a sizable fish processing industry, which sources from both domestic and international supplies. The Chinese processing industry benefits from large and very efficient units with extremely competitive labour and production costs and has come to play a crucial role in supplying international markets with processed fish products, such as fish fillets or processed shrimp.

As such, the entry of China into the WTO in late 2001 certainly was a significant event, especially since it was expected that China would play an important role in NAMA negotiations on world fish trade. As part of its accession conditions, China lowered its average import tariffs on fish and fishery products from as high as 15.3 percent in 2001 to 12 percent in 2002, 11 percent in 2003, and finally 10.4 percent in 2004. After 2004, only minor reductions remain to be implemented as part of its present commitments to the WTO. Lower barriers to trade with China in the form of reduced import tariffs will increase competitiveness of foreign suppliers and lower prices for consumers. In addition, harmonisation of Chinese standards with international requirements raises the quality and safety of fish products from China in international markets. Exports of fish and fisheries products increased by 6.1 percent in volume and value terms, reaching US$2.4 billion during January to June 2003.

Moreover, rising income levels and increasing purchasing power in China have resulted in millions of Chinese consumers enjoying living standards that approach those found in many developed countries. Therefore, China is rapidly becoming a growing market for imported fish products, which are most likely to be processed in China using foreign raw materials.

Source: Lem, 2004a.

5.1 WTO Agreements with Special Significance to Fish Trade

5.1.1 Agreement on Sanitary and Phytosanitary Measures

The SPS Agreement sets out the basic rules on food safety and animal and plant health standards. According to the SPS Agreement, the standards set by Members in this regard must be based on science; applied only to the extent necessary to protect human, animal or plant life or health; and not arbitrarily or unjustifiably discriminate between countries where similar conditions prevail. While countries are encouraged to use existing international standards, they may adopt higher standards based on scientific justification and risk assessment.

The Agreement also contains provisions on control, inspection and approval procedures according to which countries give advance notice of alterations to or new SPS regulations and establish a national enquiry point through which to provide information. It recognises the Codex Alimentarius Commission, International Plant Protection Convention and World Organisation for Animal Health (OIE) as the relevant standard-setting organisations for food safety, plant health and animal health respectively.

5.1.2 Agreement on Technical Barriers to Trade

The objective of the TBT Agreement is to ensure that technical regulations or standards, including packaging, marking and labelling requirements and procedures, do not create unnecessary obstacles to trade. It encourages the development of international standards and conformity assessment, without undermining the right of countries to adopt legitimate domestic standards or regulations, for example for human, animal or plant life or health, for environmental protection or to meet other consumer interests. If there is more than one way of achieving the same objective, the TBT Agreement specifies the selection of the least trade-restrictive alternative.

The Agreement includes a Code of Good Practice for the Preparation, Adoption and Application of Standards by central government bodies and provisions for local government and non-governmental bodies to apply their own regulations.

Both the SPS and TBT Agreements are also used to ensure that domestic producers and goods of different origins are not discriminated against. The SPS and TBT Agreements were negotiated during the Uruguay Round and entered into force in 1995 with the WTO; they are complementary and mutually-reinforcing.

5.1.3 Agreement on Subsidies and Countervailing Measures

The Agreement on Subsidies and Countervailing Measures (SCM) constitutes the existing international legal regime governing subsidies. It disciplines the use of subsidies and regulates the actions that Members can against subsidies. It is in the context of the SCM Agreement that the negotiations on fisheries subsidies are taking place which aim to "clarify and improve WTO disciplines on fisheries subsidies, taking into account the importance of this sector to developing countries" (under Paragraph 28 of the Doha Ministerial Declaration). While there are currently no special WTO provisions relating specifically to fisheries subsidies, these subsidies are disciplined by the general rules on subsidies found in the SCM Agreement.

The SCM Agreement defines a subsidy as:

- specific financial transfers from the state to the industry;
- state foregoing normally collectable revenues (e.g. tax free fuel);
- provision of services or investments to industry;
- state purchases of industry outputs other than on commercial terms; or
- all forms of state income or price support.

The SCM Agreement contains two categories of subsidies:

- **Prohibited subsidies:** Export-enhancing subsidies or subsidies giving preference to

domestic producers or grants tied to the use of domestically-produced goods; and

- **Actionable subsidies:** Subsidies that may be challenged on the basis of causing adverse effects to the interests of other WTO Members.

While the role of subsidies can be seen as indirect in influencing market access, their existence clearly erodes the competitive structure of the industry. Subsidies can be challenged and countervailing measures imposed as an extreme form of market access constraint.

5.1.4 Agreement on Import Licensing Procedures

The Agreement on Import Licensing Procedures was set up to ensure that import licensing is simple, transparent and predictable. For example, the Agreement requires governments to publish sufficient information for exporters to know how and why licenses are granted. It also outlines how countries should notify the WTO upon the introduction of new import licensing procedures or changes to existing procedures. Import licenses are much less used today than in the past.

5.1.5 Anti-Dumping Agreement

The Anti-Dumping Agreement regulates how an importing country government can react to the sale of imports at prices below the prevailing costs of production in the exporting country. This Agreement allows governments to take action against dumping, including the imposition of anti-dumping duties, where there is a genuine ("material") injury to the competing domestic industry. In order to do so, the government has to illustrate that dumping is taking place, calculate the extent of dumping (how much lower the export price is compared to the exporter's home market price) and illustrate that the dumping is causing injury or threatening to do so.

5.1.6 Agreement on Rules of Origin

Rules of origin are defined as "those laws, regulations and administrative determinations of general application applied by any (WTO) Member to determine the country of origin of goods, provided such rules of origin are not related to contractual or autonomous trade regimes leading to the granting of tariff preferences" (WTO, 1995a, p209). As such, they should include all rules of origin used in non-preferential commercial policy instruments, such as in the application of most-favoured-nation treatment; anti-dumping and countervailing duties; safeguard measures; origin marking requirements; and any discriminatory quantitative restrictions or tariff quotas. They should also include rules of origin used for government procurement and trade statistics.

The Agreement on Rules of Origin requires Members to ensure that their rules of origin are transparent; do not restrict, distort or disrupt international trade, are administered in a consistent, uniform, impartial and reasonable manner. The Agreement aims for common or harmonised rules of origin among Members, except in some kinds of preferential trade — for example, countries setting up a free trade area are allowed to use different rules of origin for products traded under their free trade agreement. The Agreement establishes a harmonisation work programme, based on a set of principles including making rules of origin objective, understandable and predictable (WTO, 2005a).

5.1.7 Agreement on Safeguards

The Agreement on Safeguards (the SG Agreement) sets forth rules for the application of safeguard measures. Major guiding principles indicate that such measures be temporary and imposed only when imports are found to cause or threaten serious injury to a competing domestic industry, or applied in a non-selective manner (i.e. based on MFN). These measures may also be progressively liberalised while in effect and the Member imposing them must pay compensation to the Member(s) whose trade is affected. The SG Agreement aims to: (i) clarify and reinforce GATT disciplines; (ii) re-establish multilateral control over safeguards and eliminate measures that escape such control; and (iii) encourage structural adjustment in

industries adversely affected by increased imports, thereby enhancing competition in international markets. This Agreement was negotiated in large part because GATT members had been increasingly applying a variety of so-called "grey area" measures to limit the import of certain products (WTO, 1995b).

5.1.8 Dispute Settlement Understanding

The WTO procedures for resolving trade quarrels or 'dispute settlement' is vital for enforcing rules and for ensuring that trade flows smoothly. A trade dispute arises when a Member government believes another Member government is violating an agreement or a commitment that it has made in the WTO. Settling disputes is the responsibility of the Dispute Settlement Body (the General Council in another guise), which consists of all WTO Members. The Dispute Settlement Body has the sole authority to establish panels of experts to consider the case, and to accept or reject the panels' findings or the results of an appeal. It monitors the implementation of the rulings and recommendations, and has the power to authorise retaliation when a country does not comply with a ruling (WTO, 2005a).

A number of international disputes regarding fish and fishery products among WTO Members have taken place over the last few years. Fish-related disputes also took place in the GATT. Reductions in traditional tariff barriers, increasing number of agreements and growing international trade and inherent complexities of the trade rules all add to the increasing number of disputes. These in turn support the strengthened capability of and increased willingness by developing countries to use the procedures set out in the WTO Dispute Settlement Understanding.

5.2 Elements in the Doha Agenda with Significance to Fish Trade

The Doha round includes several issues of particular importance to international trade in fish and fishery products. These include improved market access for fish and fishery products, fisheries subsidies, environmental labelling, the relationship between WTO trade rules and MEAs, and technical assistance and capacity building (Lem, 2004b). Issues in the negotiations of relevance to fisheries include:

- Improved market access for fish and fishery products is linked to reductions in tariffs, tariff escalation, tariff peaks and NTBs through the NAMA negotiations, including zero duty proposals;
- Emphasis on protecting the special needs of developing countries through discussions of implementation issues regarding existing agreements, including longer time periods for compliance;
- For SPS and TBT measures, areas of discussion will include the participation of developing countries in setting international SPS standards and the provision of financial and technical assistance;
- Discussion on improving and clarifying WTO disciplines on fisheries subsidies in the context of the SCM Agreement in the Negotiating Group on Rules. Subsidies have been widely recognised as a contributing factor to overcapacity and consequently a significant part of overexploitation of fisheries. In this regard, trade liberalisation in concert with sustainable resource management can stimulate more efficient production with long-term environmental benefits;
- Discussion on the need for internationally agreed guidelines on eco-labelling and clarification on the relationship between eco-labelling, voluntary or mandatory, and trade rules;
- Discussions to harmonise rules of origin between Members;
- Discussions to clarify the relationship between the WTO and regional trade agreements;
- Negotiations to clarify the relationship between WTO rules and trade measures set out in MEAs as between MEA Parties. These

negotiations are relevant to fish trade and fisheries management under MEAs;

- Capacity building for developing countries to effectively negotiate in the WTO and fully exercise their membership rights;
- Capacity building and technical assistance for developing countries to implement food quality and safety requirements and other WTO commitments;
- Enhancing trade-related domestic capacity building for developing countries; and
- Operationalising the special and differential treatment status of developing countries in the WTO.

5.3 Fisheries in the WTO Negotiations

To reach full agreement on the liberalisation of fisheries trade in the NAMA negotiations, countries need to simultaneously address the following concerns:

- levels of tariff and non-tariff barriers;
- tariff escalation;
- conservation and management measures for reducing trade impacts on resources; and
- Special and Differential Treatment (S&DT) and capacity building for developing countries.

An important question for policy-makers is how the above issues can be taken up during the current NAMA negotiations in the WTO process for accelerated liberalisation. A number of general approaches have been used to speed up the negotiations on fisheries, including the bundling of issues by sector and the use of S&DT for areas of particular importance for developing countries.

This section highlights the current discussions and proposals within the WTO that may have implications for fisheries and looks at how the fisheries-related multilateral environmental agreements (MEAs) tie in with the WTO rules.

5.3.1 Non-Agricultural Market Access Tariff Reduction

Negotiations regarding market access for fish and fish products are covered in the WTO under talks in the Negotiating Group on Non-Agricultural Market Access (NAMA). Many developing countries are reluctant to commit to substantial cuts in their tariffs, fearing that this could compromise their ability to use tariffs as a policy tool to promote the growth of certain industries. They also do not see many industries where industrial tariff reductions could increase their exports, and think that developed country demands on NAMA liberalisation are disproportionate to what these countries are willing to give in agriculture negotiations. In this context, the WTO 2004 July Package states that tariffs, tariff peaks, tariff escalation and non-tariff barriers will be "reduced or as appropriate eliminated" particularly on products of export interest to developing countries. Many countries argue that fish products are, as described above, of export interest to developing countries.

Formula

WTO Members have agreed to use a mathematical formula that will specify how much tariffs must be reduced for each set of products that are represented by a tariff line. At the Hong Kong Ministerial Conference in December 2005, Members agreed to use a so-called 'Swiss' formula applied on a line-by-line (product-by-product) basis that would reduce high tariffs more than low tariffs, which would, all other things being equal, make developing countries reduce their relatively higher tariffs more than developed countries. This method is in contrast to the approach discussed at the previous Uruguay Round of negotiations, when Members agreed to reduce their tariffs overall by a certain average and had flexibility to reduce certain tariff lines more and keeping others, which were more sensitive, higher. While the Uruguay Round approach was more flexible, it also allowed the continued use of tariff peaks which are harmful to developing country exports.

Members have different types of Swiss formula to choose between. They could choose a simple Swiss formula, where all tariffs would be reduced using a coefficient which would be different for developed and developing countries. Since the higher the coefficient, the lower the required tariff reductions (see Box 5), a significant amount of time has been spent negotiating what coefficient developing countries should have. Brazil, for example, has suggested a coefficient of 30 and the US and EU have suggested 15, with WTO simulations suggesting that these would lead to tariff cuts of between 45 to 55 and 60 to 70 percent respectively. All Members accept that developing countries should have a higher coefficient, as per the Doha Declaration's statement that developing countries' NAMA commitments should be made with "less than full reciprocity" to those made by developed countries.

Alternatively, Members could use the formula proposed by Argentina, Brazil and India (the "ABI" Formula) or the Caribbean formula. The ABI formula uses the average tariff of Members as the starting base for the coefficient, and is more advantageous for developing countries as they generally have rather high average tariff levels. The ABI formula would result in using multiple country-specific coefficients. The Caribbean proposal goes a step further than the ABI proposal in that it also assigns credits to countries for specific situations such as dependence on preferences, dependence on tax revenue, limited export base, etc. Both the ABI and Caribbean formulas would lead to lower tariff cuts for developing countries (Busser, 2006).

These formulas are intended to be used to reduce bound tariffs, i.e. tariffs that countries have committed to as the maximum tariff that they will use. In practice, many countries apply tariffs that are substantially lower than those they have 'bound' in multilateral or bilateral negotiations. There are still many developing countries that have bound less than 35 percent of their tariff lines. These countries include Cameroon, Congo, Côte d'Ivoire, Cuba, Ghana, Kenya, Macao, Mauritius, Nigeria, Sri Lanka, Suriname and Zimbabwe. Under paragraph 6 of the WTO 2004 July Package, these countries, along with LDCs, will not be asked to reduce their tariffs and will be excluded from the formula, although they will be required to bind most or all of their non-agricultural tariff lines. It is important to note that as a result many African countries will not be required by WTO negotiations to reduce their tariffs on fish and fish products. In Hong Kong it was decided that unbound tariffs would be bound by adding a non-linear mark-up to the applied tariff. This will then be the base rate for future tariff cuts. The non-linear mark-up will consist of adding a number of percentage points to the applied tariff - either a constant number of percentage points, or one of two percentage point mark-up numbers depending on the level of the currently applied rate (Busser, 2006).

Special and Differential Treatment

Special and Differential Treatment (S&DT) for developing countries can provide for: (i) a longer time period in the reduction and adjustment of tariffs; (ii) credit for bound autonomous liberalisation; (iii) less than full reciprocity in reduction commitments; (iv) priority for products having export interest to developing countries; and (v) assistance for capacity building in LDCs. On the one hand, in paragraph 4 of the July Package, WTO Members agree in the "less than full reciprocity" statement to require lower commitments in the tariff reduction formula itself. In paragraph 8, they also agreed that developing countries should have longer implementation periods for tariff reductions, should be able to apply less than formula cuts for some tariff lines, and exempt some tariff lines entirely from formula cuts. This would, for example, allow a developing country with a domestic fish production sector that provides employment and development benefits which is sensitive to imports to identify which types of fish products are produced domestically, are important for local jobs and food security and then decide not to reduce tariffs in those fish products.

At the end of 2005, Argentina, Brazil, Venezuela, China, Egypt, India, Indonesia,

Namibia, Pakistan, Philippines and South Africa made a submission (TN/MA/W/65) demanding that developing countries should be able to retain the right to exempt some products from full tariff reduction or subject them to reduced tariff reduction. This could help them to manage the adjustment of sensitive sectors and to prevent the social disruption caused by job losses and closure of enterprises that would result from further liberalisation. At the same time, they would like to see relatively high coefficients or the ABI formula. However, discussions have been moving quite slowly on how many tariff lines would be subject to reduced or zero tariff cuts. These numbers will be crucial to determining what kinds of tools developing countries could have after the Doha Round to protect their fish sectors and promote food security, and also to block imports from other developing and developed countries with impacts on their exports.

Sectoral Initiative on Accelerated Reduction of Tariffs on Fish Products

Informal discussions have also been held to reduce tariffs on products in fisheries and other sectors more than that required in the formula. So-called 'sectoral initiatives' were adopted in several sectors during the Uruguay Round, but not for the fisheries sector. They involve a group of countries – who must account for a 'critical mass' percentage of total trade in the sector, such as 90 percent, for the initiative to go into effect – voluntarily signing onto a proposal agreeing to reduce their tariffs on a set of tariff lines either to zero or to another, lower 'harmonised' number. These lower numbers are then reflected in the tariff schedules that are attached to the finalised trade agreement.

Canada, Iceland, New Zealand, Norway, Singapore and Thailand have proposed a sectoral initiative on fisheries, and in a proposal submitted in October 2005 they argued that for many developing countries, trade in fish and fish products represents a significant source of foreign exchange earnings and plays an important role in income generation, employment and source of food (TN/MA/W/63). Since in many economies the prosperity of this sector relies largely on international trade, secure and stable export markets are particularly important for fish and fish products. The proposal also points out that fish and fish products continue to face higher tariffs than many other NAMA products. These averages hide a number of high tariffs and tariff escalation in developed countries. In addition, tariffs on fish and fish products generally remain high in developing countries and pose a barrier to increased South-South trade. As such, they argue that "further liberalisation of trade in fish and fish products provided by a well-developed sectoral initiative would be an important contribution to unleashing the full potential of this industry providing substantial benefits to the WTO membership as a whole, and to developing countries in particular."

There is a great deal of concern that the WTO NAMA negotiations will hasten the overexploitation of fisheries by removing trade restrictions. Perceived threats to fishery resources posed by such measures are a major source of concern for some WTO Members including Japan, Korea, and Taiwan (WTO 2003). These countries do not support further tariff reductions, which they believe will threaten resource sustainability. Other deleterious impacts of increased tariff reductions may include: (i) reduced revenues from tariffs, especially where tax systems are underdeveloped; (ii) reduced competitiveness since steep tariff cuts would mean a comparatively significant reduction in the prices of important products in developing countries; and (iii) erosion of preferences, a serious concern for developing countries.

Non-Tariff Barriers to Trade

No agreement has been reached so far as to how the WTO talks will address non-tariff barriers to trade. Bundling of issues may be necessary due to time constraints. Two approaches have been suggested, namely vertical or horizontal groupings. According to the vertical approach, all the NTBs relevant to a particular sector (such as fisheries) would be addressed at one time, regardless of whether the measures in question are divergent. According to the horizontal approach, all the notifications that have been made to date regarding non-tariff

measures would be grouped by the type of measure they involve. Currently, the United States, New Zealand and Korea prefer a vertical modality for NTBs, while Japan and the EU have called for an all-inclusive, horizontal approach. Several developing countries have said they do not want to negotiate on non-tariff components – or sectoral initiatives for accelerated tariff reductions in particular sectors, such as fish, on the other hand – until a tariff reduction formula has been agreed. On the other hand, other countries, including the EU and the US, feel that these issues are equally important and should be negotiated together. Developing countries have indicated that capacity constraints in identifying NTBs using the vertical approach could limit their ability to engage in the debate. Since the measures and as such the NTB concerns adopted in different sectors are different for each of the non-agricultural commodities, an ideal approach would be to bundle all NTB issues for each industry, such as fisheries and negotiate them in the context of that industry. Members are also considering establishing a request-offer process to resolve NTB disputes, where one Member could ask another to address a non-tariff measure that is impeding its market access. Alternatively, some have suggested creating a non-binding NTB adjudication mechanism, separately from the normal WTO dispute settlement process, that could help Members resolve NTB disputes.

5.3.2 Special and Differential Treatment and Sanitary and Phytosanitary Measures

In addition, the WTO Committee on Sanitary and Phytosanitary Measures is considering five proposals for changes to special and differential treatment in the SPS Agreement that would change the transparency and consultation procedures that developed countries would be required to undertake before adopting SPS measures that impact on developing country exports, including fish. In particular, the LDC and African groups that have been proposing changes have highlighted that S&DT in the SPS Agreement needs to be matched with technical assistance to ensure that developing countries can take advantage of the flexibilities offered by the agreement. The importance of SPS measures, and S&DT and technical assistance to ensure that developing country exporters can meet developed country requirements, has been highlighted by developing country WTO negotiators and fisheries policy-makers as crucial to their market access, so these negotiations are also very important.

5.3.3 Relationship Between WTO Rules and Fisheries-related Multilateral Environmental Agreements

The proliferation of multilateral environmental agreements (MEAs) due to increasing concern for the environment prompted several international summits and saw the initiation of a WTO Committee on Trade and Environment in 1994. Altogether, there have been six trade and environment cases under the GATT and three under the WTO. There have been several important fisheries-related trade disputes in the GATT/WTO. The first major conflict between trade and an environmental protection measure was the tuna–dolphin case between Mexico and the US in 1991. The GATT panel ruled against a US regulation which required that tuna be caught with fishing techniques that are not associated with the capture of dolphins. Subsequently, a WTO panel also dealt with a shrimp-turtle case, involving a US ban on wild shrimp from India, Malaysia, Pakistan and Thailand, which were harvested without the use of Turtle Excluder Devises and could thus harm sea turtles.

The Doha Agenda also launched negotiations on the relationship between existing WTO rules and specific trade obligations in MEAs. There are currently over 200 MEAs, of which about 20 contain some form of trade provisions. The negotiations are relevant to both fish trade and fisheries management because several fish species are now the object of MEAs and trade measures of RFMOs, although it is not quite clear yet when such a negotiation will take place, as Members are still discussing what constitutes an MEA. Broadly speaking, there are four categories of trade measures found in MEAs: trade bans, trade sanctions to enforce compliance, export and/or import licensing

procedures, and notification requirements and packaging and labelling requirements.

The predominant source of concern between MEA provisions and WTO Agreements are MEA trade-related provisions that seek to create rights to use trade sanctions and restrict imports in cases where the importer's domestic environmental standards are not acceptable.

The WTO Secretariat has identified trade-related provisions in 14 different MEAs, including the following related to fisheries:

a) Recommendations by the International Commission for the Conservation of Atlantic Tunas to prohibit imports of Atlantic Bluefin Tuna from several countries;

b) The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to ban trade in certain species as listed in several Appendices; and

c) The UN Fish Stocks Agreement to allow port states to prohibit landings and shipments of fish which have been established as caught in a manner that undermines the effectiveness of sub-regional, regional or global conservation and management measures on the high seas (see Box 5 for example).

Several fish species have now become the subject of agreements, such as CITES and trade measures adopted by RFMOs. Species which are subject to some degree of trade regulation for conservation purposes include sturgeon, several shark species, Patagonian toothfish, swordfish and some tuna species. In the future, the Convention on Biological Diversity (CBD) could restrict the exchange of germplasm and movement of genetically modified organisms (GMOs). Trade in GMOs is governed by the Cartagena Protocol to the CBD. WTO rules could be used to challenge MEAs that include trade-restricting regulations. Many WTO Members agree that there is no major conflict of interest or legality between the two bodies of international law. Moreover, conflicts arising between an MEA and WTO rules could be settled through the WTO dispute settlement process. However, other nations including the EC and Canada disagree and are calling for clarification of the MEA-WTO relationship.

Box 5: Chile-EU swordfish dispute

In 1991, Chile banned EU-origin fishing vessels from off-loading swordfish catches in Chilean ports on the grounds that EU fishing vessels did not observe practices necessary to aid in the conservation of highly migratory swordfish fisheries in the South Pacific. In April 2000, the EU initiated WTO consultations with Chile alleging violations of GATT Articles V and XI. At about the same time, Chile initiated dispute resolution proceedings under the auspices of the International Tribunal for the Law of the Sea (ITLOS). These two avenues may have prompted contradictory judgments. However, proceedings in both the WTO and the ITLOS were suspended by Chile and the EU in 2001, following a bilateral agreement on a provisional arrangement governing fishing for swordfish in the region.

6 RECOMMENDATIONS – PRIORITY AREAS FOR ACTION

The primary objectives of negotiations at the WTO in relation to fish trade should be to: (i) harmonise trade policies, including tariffs and NTBs; (ii) ensure trade contributes to social and environmental sustainability; and (iii) create a level playing field in trade and market access negotiations, including by increasing the capacity of developing countries in technical, institutional and legal areas. A three-pronged strategy will be necessary to achieve effective liberalisation of fish trade (Figure 4). This strategy will involve action via:

(i) the WTO negotiations on tariffs, standards and sustainability;

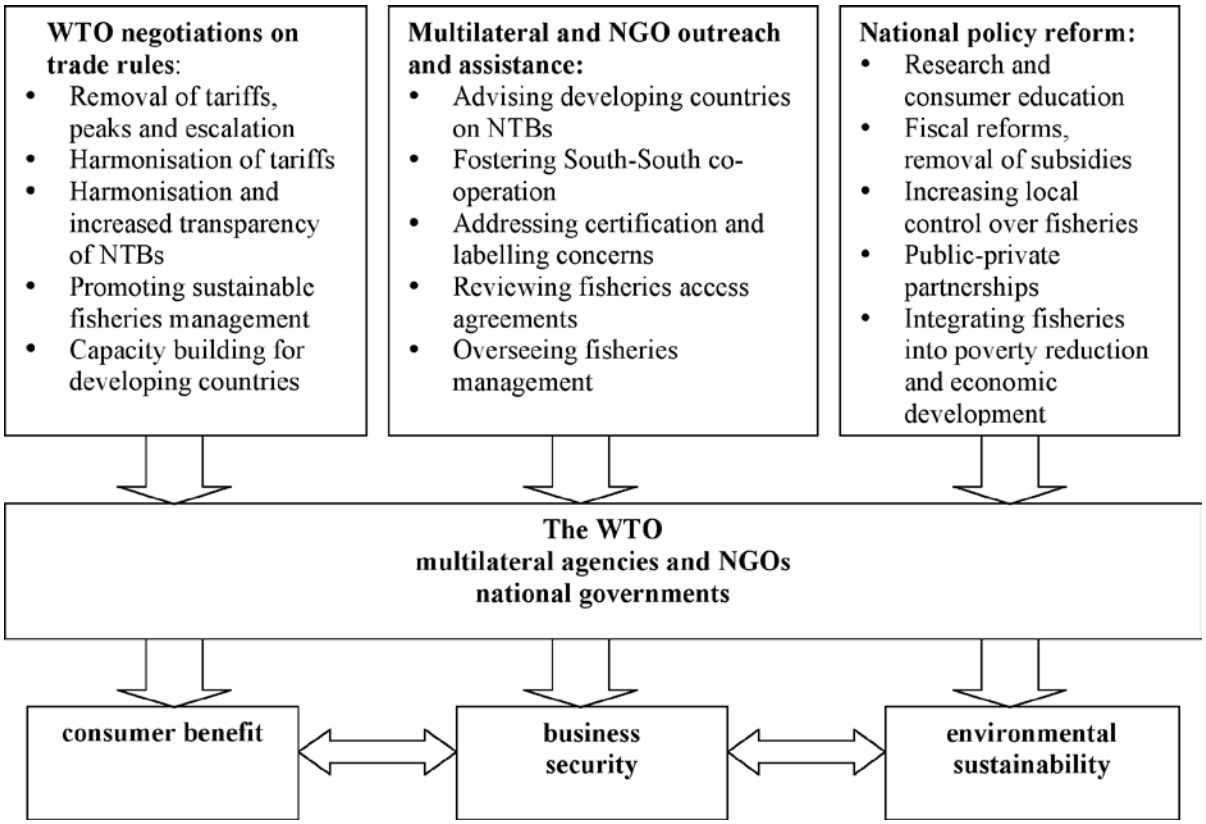
(ii) multilateral and NGO outreach and assistance for research and capacity building; and

(iii) national policy reforms to support sustainable fisheries management, trade and development

Since the publication of the Doha Agenda, the fisheries sector has revealed a number of dynamics that are significantly different from other non-agricultural sectors, including SPS- and NTB-related concerns and environmental health and resource sustainability issues. These give fisheries a unique status in the NAMA negotiations. Hence, over and above the tariff and subsidy-related negotiations, a number of institutional and policy-related multilateral agreements with direct involvement of the WTO will be necessary to deal with the diverse concerns of WTO Members on fisheries. The absence of clearly-defined property rights over many national and international fish stocks, and the evolving nature of resource management concerns in the emergent aquaculture industry provide significant additional basis for multi-level and parallel measures in the WTO negotiations on fish trade liberalisation.

The proposed strategy should be supported by a set of complementary measures to ensure the realisation of the full benefits of trade and

Figure 4: Recommended Three Pronged Strategy



Source: developed by the author.

the mitigation of its negative consequences on WTO developing country Members, and on the sustainability of fisheries resources worldwide. These complementary measures are necessary to address the issue of incoherence between international, national and regional trade-related policies. These measures are discussed below in the context in which they must be implemented.

6.1 WTO Negotiations

6.1.1 Tariffs

Further tariff reduction and harmonisation of tariff structure between countries, as well as the accelerated removal of tariff escalation and tariff peaks should be pursued with the necessary provisions to safeguard resources from overexploitation and minimise costs to developing countries. Tariff escalation, for example, has created disadvantage for developing countries wanting to develop value-added products using domestic as well as imported raw materials. Removal of such tariff escalation and tariff peaks will benefit all countries in the long run, and stimulate South-South trade. By removing tariff escalation, WTO Members can facilitate innovations and increases in value-added products and stimulate their local economies. Fish-exporting developing countries should insist on the reduction of import tariffs on processed fishery products in developed countries. By the same token, developing countries should also bind their tariffs to the greatest extent possible to create a predictable business environment, which will increase the confidence of investors and exporters.

On the whole, the removal or reduction of tariffs will further stimulate international fish trade. Removal of protectionist tariff peaks and tariff escalation will enable developing countries to process fisheries products, take advantage of comparatively low operational costs and, therefore, add value to their exports. More transparent and predictable tariff regimes also stimulate investment in processing, implementation of standards and create a policy environment and awareness for better resource management. The combined result of these effects will have numerous benefits, including lower prices for consumers all over the world, higher local incomes and employment opportunities, especially in developing countries.

6.1.2 Non-Tariff Barriers to Trade

NTBs have in the past promoted disguised protectionism, as countries have shown tendencies to shift from one instrument to another. Hence; vigilance on the part of the WTO will be necessary against shifting disguised protectionism in all its different forms. Country of origin labels, traceability, and bioterrorism measures pose significant challenges for suppliers and are becoming areas of increasing concern.

a) SPS and TBT Concerns

Food safety standards are developing rapidly, requiring improved information flows between stakeholders in the food supply chain (e.g. producers, traders, exporters, government officials, international policy-makers and donors). These include better access to scientific and technical information to foster coherence in the standard-setting processes. SPS notifications are at present difficult to access and/or analyse. More transparent and harmonised notifications (including on the Internet) would benefit exporting countries. Improved mechanisms are required for the provision of legal and technical assistance, including legal assistance to participate in WTO dispute settlement procedures. Most notably, improved harmonisation of SPS and TBT requirements and standards is necessary at the international level, given the proliferation of standards in different countries and regional trade bodies. To the extent possible, The Codex Alimentarius Commission should be used as the baseline for harmonised standards. Greater regional co-operation between developing countries on SPS issues would also be constructive.

There needs to be a greater understanding and recognition of the problems facing developing countries, alongside efforts to change institutional structures relating to standards setting on SPS and TBT. Greater involvement of developing countries in the international setting of standards would have a positive impact. S&DT is also important to assist optimal compliance in developing countries. The increase in eco-labelling could also impact market access for developing countries. As a result, developing countries need to participate actively in the development of eco-labels at the regional and multilateral level.

In order to comply with international safety and quality standards, governments should be more proactive in assisting the private sector to find solutions. This should include risk and exposure assessment and building national capacity to implement risk analysis as part of the regulatory decision-making process before the formulation of regulations. Based partly on the risk assessment analysis, the provision of longer periods in which to achieve compliance may be possible and beneficial, especially with regard to TBT and environmental issues.

Increased transparency will encourage industry to invest in health and safety measures, which may also help to gain certification for eco-labelling schemes. Consumers will benefit from improved quality and safety of fish. Many SPS measures can reduce the harmful environmental impacts of fishing and aquaculture and, therefore, can be expected to have positive ecological effects. Strengthened consultation with developing countries will improve compliance in many areas.

b) Other Non-Tariff Barriers to Trade

The recommendations on SPS and TBT also apply to anti-dumping and safeguard measures, which are favoured by some countries and are increasing in importance. While traceability will have a major influence on food safety, the vast majority of stakeholders in the fishery sector are unaware of this impending measure. Without sufficient preparation, many countries are likely to be caught by surprise, as was the case with the EU-introduced SPS-related export bans in the 1990s. Practical information on what is involved and its potential to become a major issue is urgently required. An integrated programme for developing the needed infrastructure is necessary to enhance understanding of these measures in order to mitigate their negative impacts on market access.

As with tariffs, the removal of NTBs will likewise increase trade and market access. Producers will be protected against shocks caused by the rejection of imports, anti-dumping duties, safeguard measures, or future traceability requirements.

6.1.3 Promoting Sustainable Fisheries Management

As the WTO does not have a mandate to influence national policies on the management of natural resources such as fisheries, the WTO's ability to ensure sustainable fisheries development through international trade is somewhat limited. The latter is clearly a WTO mandate, whereas trade is dependent on long-term prospects for resource availability. Although most management solutions should be addressed through national policies, MEAs and regional fisheries bodies, the WTO should facilitate and promote comparable policies that are necessary to protect fisheries resources. In this respect, the negotiations to clarify the relationship between WTO rules and trade measures in MEAs in the Doha Round are of key importance to avoid future disputes and to avoid undermining progress in MEAs and RFMOs. It is crucial to agree on the modalities for regular information exchange between MEA secretariats and the relevant WTO committees, as well as criteria for the granting of observer status, as mandated in the negotiating mandate on trade and environment.

As a contribution to fisheries management, the removal of fisheries subsidies is an area where the WTO can catalyse efforts towards more sustainable resource use through the lowering of artificially high capacity that these subsidies have prompted in the past, while allowing non-

distorting subsidies intended to assist developing country investment in fisheries. The removal of subsidies and clarification of actionable and non-actionable subsidies should be done in the context of the Doha Round. However, S&DT for developing countries is needed in the subsidies agreements, given the high levels of poverty and poor infrastructure in these areas and the limited capacity of producers to invest in systems upgrading.

6.1.4 Trade Negotiations and Developing Countries

Specific institutional reforms are needed within the WTO related to the decision-making and negotiating processes, to enable developing countries to more effectively engage throughout all stages of the negotiations and to be able to comply with the trade regulations. Improved transparency of, and enhanced participation in the negotiating process are priorities. Success in this regard will be the true test of whether the current negotiations deserve to be referred to as the "Doha Development Agenda." In this respect, it is crucial to address the wide-ranging capacity-building needs of developing countries, including those related to negotiating skills (by clarifying technical trade terms), technical compliance issues, identification of trade opportunities, information on institutional approaches and procedures and legal procedures. Rigorous consultation with primary stakeholders, including workers, NGOs and industry is necessary to ensure that capacity building and policy formulation is responsive and inclusive.

There is also a need for capacity-building measures to assist developing countries in implementing agreements on food quality and safety measures with due consideration to regional conditions. Developing countries should have equal influence in the setting of these standards. Advance notification and adequate warnings on bans and penalties should be ensured. Financial and technical assistance should be given to LDCs to ensure conformity with requirements. In this respect, the Integrated Framework Initiative, which provides assistance on trade-related capacity building in LDCs, creates capacity to benefit from international trade and could complement work on linking aid and trade, pending support and funding.

In addition, special and differential treatment is required to ensure that developing countries are able to benefit fully from increased trade liberalisation, (see section 5.3.1). This will entail trade-related technical and financial assistance, longer implementation periods for compliance, less-than-full reciprocity in reducing commitments on tariffs and enhanced tariff reduction on products of export interest.

S&DT provisions can ease pressures on fisheries if higher revenues can be derived from exports of other products or value-added goods. Such provisions could also have positive effects on sustainable development if they allow developing countries to preserve sufficient policy space for flexibility in their choice of economic tools regarding fisheries conservation, including incentive measures. In this context, discussions on fisheries, international trade and sustainable development will most likely need to consider new measures that can be taken to facilitate the capacity of developing countries to participate in legitimate environmental protection measures without compromising national development goals. S&DT is essential to achieve both real progress and future compliance.

6.2 Capacity Building and Outreach by Multilateral Agencies and NGOs

Bilateral and multilateral agencies also need to contribute to capacity building and technical assistance for developing countries. These agencies need to work together in this area, focusing particularly on supporting strategic and proactive management, developing and

promoting cost-effective approaches for small- and medium-sized producers and paying greater attention to the challenges and opportunities offered by South-South trade. Agencies also need to facilitate developing countries' access to best technology and promote active information exchange between countries and within sectors to raise awareness about market needs and requirements. Finally, assistance to enable developing countries to establish adequate governance in the form of a legal framework and functioning and stable institutions is also of paramount importance.

6.2.1 Non-Tariff Barriers

Further empirical studies are needed to monitor the impacts of NTBs on poor and vulnerable groups, including, for example, processors, shrimp seed collectors, small-scale fishers and workers. Technical assistance units can be set up by major multilateral food and trade agencies, as well as international NGOs to address NTBs, such as SPS and TBT restrictions and anti-dumping measures, and to provide a source of information for developing countries during WTO negotiations. There is scope to cover a range of trade-related support in this context. For example, UNCTAD, the International Trade Centre (ITC) and the FAO are well placed to identify alternative strategies and markets for countries whose exports are affected by NTBs. Training and awareness-building initiatives should be practically oriented. International NGOs and aid agencies can also help to initiate appropriate management expertise and mitigate certification costs, which can otherwise exclude fisheries in developing countries.

The development of practical manuals and other relevant dissemination materials explaining the various steps in countering NTBs is also important. Support and advice in the area of SPS requirements should be a priority. Future efforts to mitigate the negative effects of trade could also be through developing a new set of "Technical Guidelines to the Code of Conduct for Responsible Fisheries" that will include SPS and NTB related agreements and their compliances.

6.2.2 Fostering South-South Co-operation

In addition to the benefits from increasing the harmonisation of trade rules and agreements under regional economic bodies, developing countries have a wealth of experience in handling fish trade in tropical fish species, which could provide the basis for greater South-South co-operation. This can be shared constructively to empower developing countries through co-operation to facilitate technology transfer; exchange of harvesting and processing skills, trade data and marketing information. The various FAO programmes on trade, food security and nutrition could serve as starting points for such co-operation. There is enormous need for such co-operation in West Africa, for example, given the high degree of informal trade and informal trade barriers between countries in the region, which thrive on the lack of harmonisation.

6.2.3 Certification and Labelling Concerns

In the absence of sufficient empirical research on the actual impact of labelling on developing country exports, caution is required in making policy recommendations on ethical, social or environmental certification and labelling (Bostock et al., 2004). The overriding recommendation, however, is to support detailed empirical studies to explore actual trade flows and potential market demand for socially- and environmentally-certified products under different initiatives. The positive and negative impacts of environmental and social certification and labelling need to be clarified in order for developing countries to make informed decisions as how to best deal with this increasingly important element of international trade.

If impacts on developing country producers become widespread, potential policy recommendations, many of which also apply to exporting country governments, include:

- Advocacy to increase the relevance of existing schemes to developing country producers;

- Support to strengthen fisheries management in developing countries to increase the likelihood of successful certification;
- Investigation of ways to bring down the costs of certification and compliance with different initiatives by allowing greater flexibility;
- Support to cover certification and compliance costs in particular fisheries or, at least, to provide credit to small-scale producers who may otherwise have insufficient access to capital; and
- Designing appropriate mitigating measures to deal with particular distributional impacts of certification in developing countries, e.g. gender effects, impacts of different species in different locations on producers and access to different supply chains.

Certification of fisheries may have important future benefits as incentives for better resource management in developing countries, if these problems are overcome.

6.2.4 Fisheries Access Agreements Concerns

Historically, developing coastal states have entered into bilateral fisheries access agreements if they lack the capacity to exploit their domestic fishery resources. Ideally, these countries should increase their fisheries capacity and utilise their own resources. If tariff escalation is concurrently reduced, there is enormous potential for fish-exporting developing countries to add value to their exports by processing fish products domestically. For example, the EU has tended to import fish mainly as a raw material for its processing industry, placing stringent rules-of-origin requirements for developing countries to qualify for preferential tariff access of fish and fish products into the EU market.

In many developing coastal states, access agreements are a significant source of income, particularly for small island developing states (SIDS). Nevertheless, experts consider that the terms of these agreements have not always supported sustainable fisheries management in the host country (WWF, 2004). Fish stocks have been depleted in many developing countries due to the subsidised activities of distant water fishing fleets. In this respect, the WTO negotiations to discipline fisheries subsidies could impact on reforming access agreements.

6.2.5 Overseeing Fisheries Management

Regional and international approaches are of crucial importance to manage straddling stocks and migratory species. These fish stocks require the combined management efforts of many countries. Given the plethora of regional fisheries bodies, multilateral agencies, NGOs and MEAs, a key issue is the appropriate body to oversee fisheries management. Commitments in these multilateral bodies are often voluntary, not harmonised and differ markedly in their efficacy. These bodies may also contain or recommend trade-related measures that may contravene WTO rules. Hence, efforts should be made to identify a competent body such as the FAO to coordinate and advise on fisheries (including aquaculture) management. A competent international body like the FAO should also be vested with reporting responsibilities to strengthen compliance monitoring with regard to MEAs and national and international fishing regulations.

6.3 National Policy Reforms

6.3.1 Research and Education

Government agencies and national NGOs and scientific organisations have important roles to play in fisheries management and conservation, by educating the public on the state of world fisheries and informing them on how to become responsible consumers. Civil society groups need to build capacity and understanding to hold governments accountable to their international fishery commitments and elevate the status of fisheries management in the political agenda. Informed civil society groups can also generate stronger political support for improved management and play a more active

role in influencing the performance of both government and the fishing industry.

Technological advances will become increasingly important in mitigating the environmental impacts of fisheries. Priority should be given to facilitating technology transfer and supporting capacity building in developing countries in these areas. These may include techniques that cause less ecological degradation and reduce by-catch through increased specificity. Research is also needed on recent technological advancements that lessen the environmental impacts and increase the efficiency of aquaculture operations. Studies should focus on improving small-scale or rural aquaculture, which has important food security dimensions, while discouraging unnecessary intensification of practices, such as wasteful use of fishmeal. This may include market incentives, such as certification for sustainably-farmed products and proper labelling of aquaculture products.

6.3.2 Institutional Reform

The main focus of institutional reform and governance policies should be to:

- Improve the artisanal sector, such as conditions of work and infrastructure, roads and communications networks, processing and trading establishments and fish inspection services; and protect the small-scale and traditional fishery sector through technical assistance, training, investment support, fiscal measures and economic incentives;
- Reduce social conflicts and damage to the coastal environment;
- Ensure that the fisheries sector meets global market quality requirements through improved information flows to and from communities and producers; and
- Promote investment and training, and partnerships between developing country fish exporters and importing country distribution centres.

Governments should reduce and eventually eliminate all capacity- and effort-enhancing subsidies. Exceptions may be appropriate only if a capacity-enhancing subsidy is targeted at an artisanal fishery, which is clearly operating within the confines of an underexploited and well-managed fishery.

To aid in long-term management, fiscal reforms can be essential in creating incentives to minimise discards and other ecosystem impacts through discard bans, certification schemes and practices that facilitate market access for sustainably-harvested fish. However, care must also be taken to avoid creating non-tariff barriers. Governments should consider fiscal reforms, such as tradable quotas to reverse perverse incentives to over-fish, which may be economically and politically costly in the short term since they involve the creation of new institutions and often reduce fishing capacity. Long-term benefits can only accrue if complementary trade and fisheries management systems are developed simultaneously.

Given that the open access nature of fishery resources creates incentives for over-fishing, this aspect also needs to be addressed. Institutional reforms are required to foster more effective fisheries management systems. Effective institutional structures will vary between countries and it is highly unlikely that a unique solution exists. Establishing property rights and new forms of management cost-sharing contracts between stakeholders and the government will also be important. Co-management programmes that devolve control of certain fishing grounds to local fishing communities are a potential solution. This type of management regime can take advantage of indigenous and traditional knowledge and give local people a stake in maintaining the fisheries resource. Devolution of authority should be well-defined and legally recognised, and should include the responsibility to harvest sustainably. Local control must also be integrated into the wider coastal management regime and co-ordinated with industrial fishing and other development activities. However, local control needs to be supported with technical and management assistance at the state level. Communication between central and local government is also important to link

international processes, such as in the WTO, with local management authorities.

Sustainable aquaculture development also must be adequately regulated and protected by integrated and effective legal and administrative frameworks that produce public policies and legislation granting investors, among other things, legal rights to good quality water and land that support farms.

6.3.3 Public-Private Partnerships

Public-private partnerships (PPPs), which are closely linked to the policy-making process, will facilitate efforts to enhance trade. Appropriate institutional structures and participatory mechanisms will be required to enable such partnerships to function effectively. NGOs and export promotion agencies could also be involved in PPPs. Public and private responses should be integrated proactively to address such issues as trade-related infrastructure and compliance with international standards.

Public-private partnerships are also needed to assist small-scale producers to address economies-of-scale issues. Further analyses of these issues will be needed to identify feasible solutions. These include:

- Assessment of the existing patterns of post-harvest fish handling and processing and of the technical capacity to comply with health and sanitary standards;
- Evaluation of the costs and benefits of food safety standards and other regulatory measures to exporters, processors, poor fishers and fish farmers of exporting developing countries;
- Characterisation of production, supply chain, trade policy processes and policy environments in developing countries, and identification of principal interest groups and institutional framework to vertically integrate the supply chain to face the challenges of globalisation; and
- Enhancement of the capacity of developing country institutions to assess fisheries trade policies and link them to fish supply chains, related institutions and stakeholders, and processing industries to establish a comprehensive institutional network to manage fish and seafood quality at a lower cost.

6.3.4 Economic Development and Poverty Alleviation

Trade liberalisation alone cannot ensure equity of opportunities and sustainability of livelihoods, particularly in a global context. Therefore, there is a critical need to integrate national fisheries policies into economic development and poverty reduction policies. Indeed, poor governance and the lack of accountability and transparency can cause misallocation and inequity in the flow and distribution of benefits from trade to the poorer segments of the population and hinder progress in poverty reduction efforts in developing countries. Effective sectoral governance and management are necessary for mitigating problems, such as conflicts between industrial and artisanal operators, and increasing competition for raw materials in the processing sector. Thus, national policies should focus on creating institutions and building infrastructure and capacity that enable small-scale fisheries and farmers to participate and take advantage of globalisation and international trade, as well as prevent their exclusion and marginalisation. In this respect, financial support to promote community and regional development programmes and resources that improve the food security of poor fishers and fish workers should be recognised as integral parts of a developing country's public policy. These may include subsidies that provide income support, promote community and regional development programmes, and raise the social security of poor fishers and fish workers.

There are millions of small-scale and artisanal fishers who catch fish primarily for household consumption or local sales, many of whom lie in political margins in isolated locations. Of these, 5.8 million are estimated to live on less than US$1 a day. This particular group needs to be given special consideration in policy-making due to their high level of vulnerability to the social impacts of trade liberalisation (see section 4.3). For example, social security needs

to be improved for those that are susceptible to job loss or have undergone profound social changes. In addition, fishing communities are often unable to foster long-term investments from employment benefits of increased trade. The promotion of savings and investment at the household and community level, as well as the strengthening of grass-roots associations is called for. Overall, a concerted effort should be made to ensure the effective integration of fisheries into key national policies on poverty reduction and rural development, paying particular attention to gender issues and internationally-recognised fishery development instruments, such as the FAO Code of Conduct for Responsible Fisheries.

ANNEX 1

WTO Members' submission on market access for non-agricultural products – Positions and proposals on fisheries tariffs (as of 10 March 2006)

Country(ies) (Date / Document Symbol)	Highlight of Proposal	Overall Position on Liberalisation			Major Concern(s)
		Yes	No	Condi-tional	
Singapore **10 September 2002 TN/MA/W/8**	"…propose that nuisance tariffs be eliminated, and tariff peaks be substantially reduced, if not eliminated. The negotiations would also need to define what constitute nuisance tariffs and tariff peaks."	✓			WTO members should try to ensure a comprehensive and balanced tariff package for all countries.
Canada **15 October 2002 TN/MA/W/9**	"… supports the negotiation of new "zero-for-zero" (duty-free) sectoral agreements to include sectors of interest to both developed and developing countries. … support new agreements for sectors such as fish products, … "	✓			Canada favours eliminating nuisance tariffs and maximising the use of ad valorem rates.
USA **2 December 2002 TN/MA/W/18**	"As soon as possible but no later than 2010, elimination of tariffs in the following additional sectors and others, as agreed by Members: …, fish and fishery products, scientific equipment, and environmental goods."	✓			The US is keen on increasing market access through the reduction and elimination of barriers to trade, including the elimination of duties on non-agricultural products by 2015.
Japan **6 January 2003 TN/MA/W/15/ Add.1**	"… the civil society is also concerned about the potential negative influence of a free trade regime on forest and fishery resources. It is indispensable for the WTO to promote trade liberalization, while … taking into consideration the global environmental issues and ensuring sustainable use of exhaustible natural resources."		✓		A zero-for-zero approach in the fishery sector should not be pursued since it will abolish all tariffs regardless of the level of fishery resources, management status, and importance of fisheries and fishing communities in each country.
India **8 January 2003 TN/MA/W/10/ Add.1**	"Tariff peaks, tariff escalation, high tariffs and non-tariff measures, in particular in products of export interest to developing countries, are effectively dealt with. Tariff peaks imposed by developed countries are often concentrated in products that are of export interest to developing countries …"			✓	"… most developed countries' tariffs for such items increase with the level of processing of such products and that such products are often excluded from preferential tariff schemes such as GSP, is well documented"

Country(ies) (Date / Document Symbol)	Highlight of Proposal	Overall Position on Liberalisation			Major Concern(s)
		Yes	No	Condi-tional	
Korea **16 June 2003 TN/MA/W/6/Add.2**	"… firmly believe that fish and fish products are not applicable for sectoral tariff elimination … and should not be included as a possible sector for negotiation."		✓		Korea has concerns about the legitimacy of "environmental concerns" of members with commercial interests in reducing subsidies.
Papua New Guinea **2 July 2003 TN/MA/W/39**	"…agrees on the proposed sector elimination approach in order to eliminate all tariffs on products of particular export interest to DC. …The sectoral tariff elimination will be achieved in three phases of equal length. Developed countries shall eliminate tariffs at the end of the first phase; developing countries will reduce tariff to [10% or 15%] during phase 1 and achieve elimination at the end of phase 3."			✓	
Chinese Taipei **7 July 2003 TN/MA/W/19/ Add.2**	"… to list fish and fish products as one of the sectors for tariff elimination, the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu believe that this would lead to the depletion of fish stocks through the over-exploitation of fishery resources."		✓		Focusing on lowering the most serious trade-distorting tariff items (i.e., unbound, high tariff lines and tariff peaks) while allowing some flexibility for tariff reduction will be the most appropriate and practical way of achieving the dual objectives of marine fish stock conservation and further liberalisation of the fish and fish products trade.
Korea **15 July 2003 TN/MA/W/6/Add.3**	"… tariff elimination for fish and fish products would bring about undesirable results for both fish exporting and importing countries in terms of resource depletion."		✓		
Mauritius **15 July 2003 TN/MA/W/21/ Add.1**	".. tariff lines be either excluded from tariff reduction or that a maximum tariff reduction of 10% on each tariff line so identified be staggered over 10 annual installments on developed country markets."			✓	Only a limited number of specific tariff lines within the broad product categories are of direct concern to the beneficiary countries.

Country(ies) (Date / Document Symbol)	Highlight of Proposal	Overall Position on Liberalisation			Major Concern(s)
		Yes	No	Condi-tional	
Canada, Iceland, New Zealand, Norway, Singapore and Thailand **18 Oct 2005 TN/MA/W/63**	"A sectoral agreement on fish and fish products resulting in the elimination or substantial reduction of tariffs would be an important contribution in facilitating further economic development … "	✔			
Brazil **2005**	Special provisions should allow developing countries certain subsidies (e.g., those for fishing vessel construction or repair or for vessel or gear modernisation, fuel or ice supplies, and access payments received). A period of five years will be given to developing country Members to phase out and eliminate their subsidy programs that fall within the prohibited subsidies category.			✔	
Fiji, Papua New Guinea, and the Solomon Islands **2005**	The prohibition of measures that may increase fishing capacity in a responsible manner without negatively affecting the productivity of the resource and sustainability of the ecosystem will unduly limit the ability of certain states to develop and utilise their fisheries resources for sustainable development, food security, and poverty reduction.				These countries are concerned that information used in examining the relationship between subsidies and fisheries depletion has been based mainly on data for more advanced countries with large scale industrial fleets.
Canada, Iceland, New Zealand, **Norway, Panama, Singapore and Thailand** **22 May 2006 TN/MA/W/63/ Add.1**	With a view to moving towards the objective of comprehensive elimination of all tariffs and unjustified non-tariff barriers affecting fish and fish products, modalities could include the reduction of tariffs to zero by developed countries and less than zero ("x) for developing countries, along with longer implementation periods for developing countries.	✔			

Source: Available on http://www.trade-environment.org/page/theme/tewto/para16.htm

ENDNOTES

1 Tariff peaks are relatively high tariffs usually on sensitive products amidst generally low tariff levels. For industrialised countries, tariffs of 15 percent and above are generally considered as tariff peaks. Tariff escalation refers to higher import duties on semi-processed or value-added products than on raw materials. They are often used to protect domestic processing industries.

2 EEZs currently cover 40 percent of the world's oceans and 90 percent of living marine resources.

3 Referred to as small-scale fisheries, these are typically traditional fisheries involving fishing households (as opposed to commercial companies), which use relatively small amounts of capital and fishing vessels, make short fishing trips and engage in fishing close to shore.

4 RFMOs monitor and manage specific fish species, stocks or geographic regions. Some help to determine the overall catch quotas and the allocation of quotas among member countries, while others play a more scientific and advisory role. There are 33 active marine and inland RFMOs (Swan, 2000).

5 IUU fishing occurs outside established laws (illegal), in areas such as the high seas where there are no laws (unregulated), or where no record is kept of catches (unreported).

6 Literature on the economics of safety standards suggests significant economies of scale in some cases (Unnevehr, 2000). However, in the case of the Kenyan fish processing sector, smaller processors incurred costs of the same order of magnitude as larger ones.

REFERENCES

Please note that the url links provided are subject to change as the web pages may be moved within the website. If a link does not work, readers are advised to go to the homepage and search within the site, using some of the terms provided in the title.

Ababouch L., G. Gandini, and J. Ryder. 2005. *Detentions and Rejections in International Fish Trade*. FAO Fisheries Technical Paper No. 473. Rome, Italy: FAO.

Ahmed, M. 1999. "Policy Issues Deriving From the Scope, Determinants of Growth and Changing Structure of Supply of Fish and Fishery Products in Developing Countries, pp. 37-57. In M. Ahmed, C. Delgado, S. Sverdrup-Jensen and R.A.V. Santos. (eds.). 1999. *Fisheries Policy Research in Developing Countries: Issues, Priorities and Needs*. International Centre for Living Aquatic Resources Management (ICLARM) Conference Proceedings. 60.

Ahmed M. and M.H. Lorica. 2002. "Improving Developing Country Food Security Through Aquaculture Development—Lessons from Asia." *Food Policy* 27:125–141.

Ahmed, M., Rab, M.A., and Dey, M. 2003. *Changing the Structure of Fish Supply, Demand and Trade in Developing Countries—Issues and Needs*. Proceedings of the Eleventh Biennial Conference of the International Institute for Fisheries Economics and Trade (IIFET), Wellington, New Zealand, 19-22 August 2002.

Ashe F. and F. Khatun. 2005. *Aquaculture, Trade, and Sustainability. Issue Brief*. Presented at the International Centre for Trade and Sustainable Development's Roundtable on Untangling Fisheries and Trade: Towards Priorities for Actions, Geneva, Switzerland, 9-10 May.

Bostock, T., P. Greenhalgh. and U. Kleih. 2004. *Policy Research—Implications for Liberalisation of Fish Trade for Developing Countries: Synthesis Report*. Chatham, UK: Natural Resources Institute.

Brown, J. and M. Ahmed. 2004. *Consumption and Trade*. Paper presented at the *Sustainable Fisheries: Facing the Environmental Challenges,* sponsored by the European Parliament, Brussels, 8-9 November.

Busser, Esther. 2006. *How will the outcome of the Hong Kong Ministerial impact the textiles and clothing sector?* Geneva: International Confederation of Free Trade Unions.

Cato, J.C. and C.A. Lima dos Santos. 2000. "Costs to Upgrade the Bangladesh Frozen Shrimp Processing Sector to Adequate Technical and Sanitary Standards and to Maintain a HACCAP Programme". in *The Economics of HACCP: New Studies of Costs and Benefits*. L. Unnevehr (ed.), St. Paul, MN: Eagan Press. 385–402.

Chong, K.-C., Smith, I. R. and Lizarondo, M. S. (1982) *Economics of the Philippine Milkfish Resource System*, United Nations University, Tokyo.

Codex Alimentarius Commission (CAC). 2004. *Codex Committee on General Principles: Twentieth Session 3-7 May 2004: Definition of Traceability/Product Tracing of Foodstuffs*. Rome, Italy: FAO. Available online at http://www.codexalimentarius.net/ccgp20/gp20_01e.htm. Accessed March 2006. CX/GP04/20/06 and -Add.1 and -Add.2

Coleman, R.W. 2005. *Progress in Developing the Global Seafood Trade*. Paper presented at the International Trade and Finance Association 15th International Conference, Istanbul, Turkey, May.

Commission of the European Communities. 2002. Communication from the Commission on an integrated framework for fisheries partnership agreements with third countries.

Deere, C. 2000. *Net Gains: Linking Fisheries Management, International Trade and Sustainable Development*. Washington D.C.: World Conservation Union.

Delgado, C.L., N. Wada, M.W. Rosegrant, S. Meijer and M. Ahmed. 2003a. *Fish to 2020: Supply and Demand in Changing Global Markets*. Washington, D.C.: International Food Policy Research Institute, and Penang, Malaysia: WorldFish Center. 226.

Delgado, C.L., N. Wada, M.W. Rosegrant, S. Meijer and M. Ahmed. 2003b. Outlook for Fish to 2020 – Meeting Global Demand. Washington D.C.: International Food Policy Research Institute, and Penang, Malaysia: WorldFish Center, 28p.

Dey, M., M.A. Rab, K.M. Jahan, A. Nisapa, A. Kumar and M. Ahmed. 2005. "Food Safety Standards and Regulatory Measures: Implications for Selected Fish Exporting Asian Countries." *Aquaculture Economics and Management* 9(1-2): 217-236 (January-August).

Dollar, D. and A. Kraay. 2001. *Trade, Growth and Poverty.* World Bank Policy Research Working Paper No. 2615, Washington, D.C.: World Bank.

European Commission Rapid Alert System for Food and Feed (EC RASFF). 2003. *Annual Report on the Functioning of the RASFF*. Brussels, Belgium: EC. Available online at http://ec.europa.eu/comm/food/food/rapidalert/report2003_en.pdf. Accessed on 15 September 2005.

European Union (EU). 2005. *Council Regulation (EC) No 980/2005: applying a scheme of generalised tariff preferences. Brussels, Belgium: Official Journal of the European Union L169, 30 June.*

FAO.1996. *Rome Declaration on World Food Security and World Food Summit Plan of Action*. Rome, Italy: FAO. Available online at http://www.fao.org/ documents/show_cdr.asp?url_file=/ DOCREP/003/W3613E/W3613E00.HTM. Accessed on 24 August 2005.

FAO. 2002a. *The State of World Fisheries and Aquaculture 2002*. Rome, Italy: FAO Fisheries Department. Available online at http://www.fao.org/DOCREP/003/X8002E/X8002E00.htm. Accessed on 12 June 2005.

FAO. 2002b. *Fishery Statistics: Reliability and Policy Implications*. Rome, Italy: FAO. Available online at: http://www.fao.org/fi/statist/ nature_china/30jan02.asp. Accessed on 5 July, 2005.

FAO. 2002c. *Code of Conduct for Responsible Fisheries*. Rome, Italy: FAO. Available online at http://www.fao.org/fi/agreem/ codecond/codecon.asp. Accessed on 14 August 2005.

FAO. 2003. *Fisheries Statistics*, Vol. 93. Rome, Italy: FAO. Available online at http://www.fao.org/fi/eims_search/advanced_s_result.asp?service=7&sortorder=3&lang=en&form_c=AND. Accessed on 20 June 2005.

FAO. 2004a. *Fisheries Statistics*. Rome, Italy: FAO. Available online at http://www.fao.org/fi/eims_search/advanced_s_result.asp?service=7&sortorder=3&lang=en&form_c=AND. Accessed on 20 June 2005.

FAO. 2004b. *State of the World Fisheries and Aquaculture 2004*. Rome, Italy: FAO. Available online at http://www.fao.org/documents/ show_cdr.asp?url_file=/DOCREP/007/y5600e/y5600e00.htm. Accessed on 11 June 2005.

FAO. 2005a. *Future Prospects for Fish and Fishery Products – Medium-Term Projections to the Years 2010 and 2015*. Fishery Information, Data and Statistics unit, FAO Fisheries Department, Rome, Italy. November.

FAO. 2005b. G*uidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries*. Rome, Italy: FAO. Available online at ftp://ftp.fao.org/docrep/fao/008/ a0116t/a0116t00.pdf. Accessed in February 2006.

FAO. 2006. *Fisheries Statistics*. Rome, Italy: FAO. Available online at http://www.fao.org/fi/eims_search/advanced_s_result.asp?service=7&sortorder=3&lang=en&form_c=AND. Accessed in February 2006.

FAO-Globefish. 2000. "Effect of World Trade Organisation Regulations on World Fish Trade." *FAO-GLOBEFISH Research Programme,* Vol. 65, Rome, Italy: FAO.

FAO-Globefish. 2004. *Fish Trade Issues in WTO and ACP-EU Negotiations*. Rome, Italy: FAO. Available online at http://www.globefish.org/index.php?id=2251.

Filhol, A. 2000. *Perspectives on World Trade Regulations*. Available online at http://ressources.ciheam.org/om/pdf/c17/96605674.pdf.

Friends of the Earth International. 2004. *What You Need to Know About NAMA: Why the WTO's Non-Agricultural Market Access Negotiations Threaten Both Environment and Development*. Briefing Paper, Friends of the Earth International. Amsterdam, The Netherlands.

FAS-USDA Foreign Agricultural Service. 2003. *Everything But Arms: Declining Agricultural Exports from Least Developed Countries*. Global Agriculture Information Network (GAIN) Report Number: E23149. Available online at http://www.fas.usda.gov/gainfiles/200308/145985702.pdf.

Gardiner, P. and Viswanathan, K. 2004. *Eco-labelling and Fisheries Management*. Penang, Malaysia: WorldFish Centre.

Grier, K., L. Martin and H. Mayer. 2002. *Country of Origin Labeling: Implications for the Manitoba Hog Industry*. George Morris Centre, December, 57 pp.

ICTSD-International Centre for Trade and Sustainable Development and IUCN-World Conservation Union. 1999. *Fish for Thought: Fisheries, International Trade and Sustainable Development*. Natural Resources, International Trade and Sustainable Development, Series No. 1. Geneva.

ILO-International Labour Organisation. 2004. *A Fair Globalization: Creating Opportunities for All. World Commission on the Social Dimension of Globalisation,* Geneva, Switzerland, February. Available online at www.ilo.org. Accessed on 14 April 2005.

ICTSD and IISD - International Centre for Trade and Sustainable Development and the International Institute for Sustainable Development. 2003. Doha Round Briefing Series: Cancun Update: Vol. 2 No.14, Market Access for Non-Agricultural Products. Geneva, Switzerland: ICTSD and IISD. Available online at http://www.ictsd.org/pubs/dohabriefings/cancun_updates/ V2_04_Mkt_ Axs.pdf. Accessed on 23 October 2006.

ICTSD-IUCN, 2005. Fish @ the WTO: Subsidies, Market Access And Anti-Dumping. *Bridges Trade BioRes* 5(21), 25 November 2005. International Centre for Trade and Sustainable Development (ICTSD) and IUCN - The World Conservation Union. Available online at http://www.ictsd.org/biores/05-11-25/story1.htm.

ISO-International Organisation for Standardization. 2000. *Quality Management Systems - Fundamentals and Vocabulary. European Standard* (EN ISO 9000:2000, Point 3.5.4). Committee for Standardisation, Brussels, Belgium: ISO.

IUCN. 2004. *Sanitary and Phytosanitary Barriers to Trade and its Impact on the Environment – The Case of Shrimp Farming in Bangladesh*. Geneva: IUCN – World Conservation Union.

Kaczynski, V.M. and D.L. Fluharty. 2002. "European Policies in West Africa: Who Benefits from Fisheries Agreements?" *Marine Policy* 26 (2): 75–93.

Kent G. 1995. "Fish for the Poor: Competing with Chickens." *Ecologist* 25(2/3): 48.

Kent, G. 2003. *Fish Trade, Food Security and the Human Right to Adequate Food.* Paper presented at the INFOSAMAK/FAO Expert Consultation on International Fish Trade and Food Security, Casablanca, Morocco, 27-30 January.

Kulkarni, P. 2005. *The Marine Seafood Export Supply Chain in India: Current State and Influence of Import Requirements*. International Institute for Sustainable Development (IISD), Manitoba, Canada, December. Available online at http://www.tradeknowledgenetwork.net/pdf/ tkn_marine_export_india.pdf

Kura Y, C. Revenga, E. Hoshino and G. Mock. 2004. *Fishing for Answers: Making Sense of the Global Fish Crisis.* World Resources Institute, Washington D.C.

Kurien, J. 1993. "Ruining the Commons: Overfishing and Fisherworkers' Action in South India.' *Ecologist* 23(1): 5–12.

Kurien, J. 2004. *Responsible Fish Trade and Food Security.* Report of the Study on the Impact of International Trade in Fishery Products on Food Security. Jointly commissioned by the FAO and the Norwegian Ministry of Foreign Affairs. Rome, Italy: FAO.

Leadbitter, D. 2004. "Seafood Trade and Market Access: Threats and Opportunities." in A.G. Brown (ed.). *Fish, Aquaculture and Food Security. Sustaining Fish as a Food Supply.* Gippsland Aquaculture Industry Network, Canberra, Australia. Available online at http://www.crawfordfund.org/awareness/fish_aqua_food.pdf. Accessed on 16 July 2005.

Lem, A. 2004a. *China, the WTO and World Fish Trade*. FAO-Globefish, Rome, Italy. Available online at http://www.globefish.org/index.php?id=2123. Accessed on 2 June 2005.

Lem, A. 2004b. *WTO Trade Rules with an Update on the Doha Round Negotiations and a Short Reference to Anti-Dumping Action and the Shrimp Case*. World Aquaculture Society, Honolulu. Available online at http://www.globefish.org/index.php?id=2122. Accessed on 1 July 2005.

Manarungsan, S., J. Naewbanij and T. Rerngjakrabhet. 2004. *Costs of Compliance to SPS Standards: Thailand Case Studies of Shrimp, Fresh Asparagus, and Frozen Green Soybeans*. Washington, D.C.: World Bank..

Mbithi Mwikya, S. 2006. *Fisheries Access Agreements: Trade and Development Issues*, ICTSD Natural Resources, International Trade and Sustainable Development Series Issue Paper No. 2, ICTSD, Geneva, Switzerland.

Moretti, V.M., G.M. Turchini, F. Bellagamba and F. Caprino. 2003. Traceability Issues in Fishery and Aquaculture Products. *Veterinary Research Communications* 27 Suppl. 1 (2003): 497-505.

Mydans, S. 2003. "The Great Catfish War." *New York Times*, 22 July. Available online at www.globalpolicy.org/socecon. Accessed on 14 April 2005.

OECD-Organisation for Economic Co-operation and Development. 2003. *Liberalising Fisheries Markets: Scope and Effects*. Paris, France: OECD.

OECD-Organisation for Economic Co-operation and Development. 2005. *Analysis of Non-tariff Barriers of Concern to Developing Countries*. Paris, France: OECD Working Party of the Trade Committee. Trade Policy Working Paper No. 16, TD/TC/WP(2004)47/FINAL, 7 November.

Parkin, J. 2003. *Joint Management Plan Review*. Ecosystem Protection: Krill Harvesting Working Group, Silver Spring, Maryland, NOAA's National Marine Sanctuary Programme.

Pew Oceans Commission. 2003. *America's Living Oceans: Charting a Course for Sea Change*. Pew Oceans Commission, Arlington, Virginia, June.

Piermartini, R. 2004. *The Role of Export Taxes in the Field of Primary Commodities*. World Trade Organization, Geneva, Switzerland.

Rahman, M. 2001. *EU Ban on Shrimp Imports from Bangladesh: A Case Study on Market Access Problems Faced by LDCs*. Paper presented at the Consumer Unity and Trust Society Centre for International Trade, Economics and Environment (CUTS-CITEE) International Workshop on "Negotiating Agenda for Market Access: Cases of SPS and TBT." Geneva, Switzerland, 24-25 April. Available online at http://cuts-international.org/mustafizur-paper.doc. Accessed on 14 June, 2005.

Roheim, A.C. 2003. "Trade Liberalisation in Fish Products: Impacts on Sustainability of International Markets and Fish Resources." *Mimeo*. Washington, D.C.: World Bank.

Roheim, C. and J.G. Sutinen. 2006. *Trade and Marketplace Measures to Promote Sustainable Fishing Practices*. Geneva, Switzerland: International Centre for Trade and Sustainable Development and High Seas Task Force.

Sadovy, Y.J., T.J. Dinaldson, T.R. Graham, F. McGilvray, G.J. Muldoon, M.J. Phillips, M.A. Rimmer, A. Smith and B. Yeeting. 2003. *While Stocks Last: the Live Reef Food Fish Trade*. Manila, Philippines: Asian Development Bank.

Seung, W.C. 2003. "WTO Disciplines on Fisheries Subsidies: A Historic Step Towards Sustainability?" *Journal of International Economic Law* 6(4): 879–921.

Standards and Trade Development Facility. 2006. *Background to the STDF Initiative*. Available online at http://www.standardsfacility.org/background.htm. Accessed on 20 January 2006.

Swan, J. 2000. "Regional Fisheries Bodies and Governance: Issues, Actions and Future Directions." *FAO Fisheries Circular* No. 959. Rome, Italy: FAO.

United Nations Millennium Development Project. 2005. *Investing in Development: A Practical Plan to Achieve the Millennium Development Goals, Overview*. United Nations Development Programme, New York.

Unnevehr, L. 2000. Food Safety Issues and Fresh Food Product Exports from LDCs. *Agricultural Economics*, Vol. 23, No. 3, September.

Valdimarsson G. 2003. *International Fish Trade. Recent Developments*. FAO Fishery Industries Division, Rome, Italy: FAO. Powerpoint Presentation. Available online at http://www.unuftp.is/ lectures_guest/gv-trade.ppt. Accessed on 20 June 2005.

World Bank. 2004. *Saving Fish and Fisheries: Towards Sustainable and Equitable Governance of Global Fishing Sector*. World Bank Report No. 29090 GLB. Washington, D.C.: The World Bank.

World Bank. 2005. *Food Safety and Agricultural Health Standards. Challenges and Opportunities for Developing Country Exports*. Report No. 31207. Poverty Reduction and Economic Management Trade Unit, and Agriculture and Rural Development Department. Washington, D. C.: The World Bank.

WWF-World Wide Fund for Nature. 2004. *Healthy Fisheries, Sustainable Trade*. Washington, D.C.: WWF.

WTO-World Trade Organization. 1995a. Rules of Origin Agreement. Geneva, Switzerland: WTO. Available online at http://www.wto.org/english/docs_e/legal_e/22-roo.pdf. Accessed on April 20 2005.

WTO-World Trade Organization. 1995b. Agreement on Safeguards. Geneva, Switzerland: WTO. Available online at http://www.wto.org/english/docs_e/legal_e/25-safeg_e.htm. Accessed on April 20 2005.

WTO-World Trade Organization. 2005a. *Understanding the WTO: The Agreements*. Available online at www.wto.org. Accessed on April 14 2005.

WTO-World Trade Organization. 2005b. *Members' Commitments*. Information available online at http://www.wto.org/english/tratop_e/schedules_e/goods_schedules_e.htm. Accessed on 2 May 2005.

SELECTED ICTSD ISSUE PAPERS

Intellectual Property Rights And Sustainable Development

The International Copyright System: Limitations, Exceptions and Public Interest Considerations for Developing Countries in the Digital Environment. Issue Paper No. 15 by Ruth Okediji, 2006

Intellectual Property and Economic Development: What Technical Assistance to Redress the Balance in Favour of Developing Nations? Issue Paper No. 14 by Michel Kostecki 2006

Utility Models and Innovation in Developing Countries
Issue Paper No. 13 by Uma Suthersanen 2006

Intellectual Property Provisions of Bilateral and Regional Trade Agreements in Lights of U.S. Federal Law (Draft)
Issue Paper No. 12 by Frederick M. Abbott, 2006

The International Copyright System: Limitations, Exceptions and Public Interest Considerations for Developing Countries in the Digital Environment. Issue Paper No. 12 by Ruth Okediji, forthcoming.
Technical Assistance for the Formulation and Implementation of Intellectual Property Policy in Developing Countries and Transition Economies. Issue Paper No. 11 by Tom Pengelly, 2005.
Intellectual Property and Computer Software, A Battle of Competing Use and Access Visions for Countries of the South.
Issue Paper No. 10 by Alan Story, 2004.

Development in the Information Age: Issues in the Regulation of Intellectual Property Rights, Computer Software and Electronic Commerce.
Issue Paper No. 9 by Ruth L. Okediji, 2004.

The Socio-Economics of Geographical Indications, A Review of Empirical Evidence from Europe.
Issue Paper No. 8 by Dwijen Rangnekar, 2004.

Encouraging International Technology Transfer.
Issue Paper No. 7 by Keith E. Maskus, 2004.

Nutrition and Technology Transfer Policies.
Issue Paper No. 6 by John H. Barton, 2004.

Non-Voluntary Licensing of Patented Inventions: Historical Perspective, Legal Framework under TRIPS, and an Overview of the Practice in Canada and the United States of America. Issue paper No.5 by Jerome H. Reichman and Catherine Hasenzahl, 2003.

Geographical Indications: A Review of Proposals at the TRIPS Council, Extending Article 23 to Products other than Wines and Spirits.
Issue paper No.4 by Dwijen Rangnekar, 2003.

Indicators of the Relative Importance of IPRs in Developing Countries.
Issue paper No.3 by Sanjaya Lall, with the collaboration of Manuel Albaladejo, 2003.

International Trade in Agriculture and Sustainable Development

Special Products and the Special Safeguard Mechanism: Strategic Options for Developing Countries
Issue Paper No. 6 by ICTSD, 2005.

Lessons from the Experience with Special Products and Safeguard Mechanisms in Bilateral Trade Agreements.
Issue Paper No. 5 by Dr. Carlos Pomareda, forthcoming.

Methodology for the Identification of Special Products (SP) and Products for Eligibility Under Special Safeguard Mechanism (SSM) by Developing Countries. Issue Paper No. 4 by Luisa Bernal, 2005.

Special Products: Options for Negotiating Modalities.
Issue Paper No. 3 by Anwarul Hoda, 2005.

Tariff Reduction, Special Products and Special Safeguards: An Analysis of the Agricultural Tariff Structures of G-33 Countries.
Issue Paper No. 2 by Mario Jales, 2005.

The New SSM: A Price Floor Mechanism for Developing Countries.
Issue Paper No. 1 by Alberto Valdés and William Foster, 2005.

Trade in Services and Sustainable Development

Opportunities and Risks in Liberalising Trade in Services: Case Study on Bangladesh.
Issue Paper No. 3 by Ananya Raihan and Mabroor Mahmood, forthcoming.

Opportunities and Risks of Liberalising Trade in Services: Case Study on South Africa.
Issue Paper No. 2 by Ian Steuart and Rashad Cassim, 2005.

Subsidies, Services and Sustainable Development.
Issue Paper No. 1 by Marc Benitah, with David Vivas-Eugui, Alexander Werth and Mahesh Sugathan, 2005.

Trade and Environment

Trade in Environmental Services: Assessing the Implications for Developing Countries in the GATS.
Issue Paper No. 3 by Colin Kirkpatrick, forthcoming.

Options for Liberalising Trade in Environmental Goods in the Doha Round.
Issue Paper No. 2 by Robert Howse and Petrus von Bork, forthcoming.

Defining Environmental Goods and Services: A Case Study of Mexico.
Issue Paper No. 1 by Enrique Lendo, October 2005.

ICTSD's project on "Fisheries, International Trade and Sustainable Development" aims to contribute to the crafting of multilateral and regional trade rules and policies that are supportive of sustainable development in fisheries. The project supports disadvantaged stakeholders, including those making and influencing policies, to engage more effectively in the ongoing WTO negotiations on fisheries subsidies. It also identifies gaps and generates knowledge, creative thinking and innovative solutions towards a holistic approach to addressing the linkages between the objectives of trade policy, fisheries management and sustainable development. In addition, it works towards strengthening analytical capacities at the national and regional levels to enable the formulation of coherent domestic and regional policies and positions on fisheries, trade and sustainable development. Project publications include:

- Fisheries Access Agreements: Trade and Development Issues. By Stephen Mbithi Mwikya, 2006.
- Trade and Marketplace Measures to Promote Sustainable Fishing Practices. By Cathy Roheim and Jon G. Sutinen, 2006.
- Market Access and Trade Liberalisation in Fisheries. By Mahfuz Ahmed, 2006.
- Aquaculture: Issues and Opportunities for Sustainable Production and Trade. By Frank Asche and Fahmida Khatun, forthcoming.
- Fisheries, International Trade and Sustainable Development: A Policy Paper. By ICTSD, forthcoming.

For further information, visit http://www.trade-environment.org/page/ictsd/projects/fish_desc.htm

ABOUT ICTSD

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.