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Certification and Sustainable Fisheries

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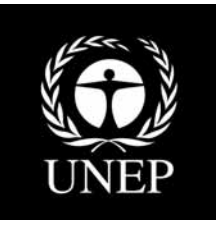

CERTIFICATION AND SUSTAINABLE FISHERIES

United Nations Environment Programme
Division of Technology, Industry and Economics

Acknowledgements

This report was commissioned by the Division of Technology, Industry and Economics (DTIE) of UNEP as part of a project funded by the Norwegian Government on “Promoting Sustainable Trade, Consumption and Production Patterns in the Fisheries Sector”. The project’s aim was to build the capacities of governments, private sector stakeholders and consumers to promote sustainable fisheries management. This includes support for the design and application of market-based instruments such as labelling and certification for sustainable, wild-caught fish products and for promoting partnerships to stimulate and help meet demand for such products. The overall project was developed and implemented under the responsibility of Anja von Moltke from UNEP’s Economics and Trade Branch (ETB).

This report was commissioned and its preparation was guided by Charles Arden-Clarke of UNEP’s Sustainable Consumption and Production (SCP) Branch, as part of the labelling and certification element of the project. Anja von Moltke commented on drafts of the report, and oversaw its finalization, editing and publication. Additional support was provided by Kenza Le Mentec of UNEP-SCP and Katharina Peschen and Sophie Kuppler from UNEP-ETB.

Graeme Macfadyen and Tim Huntington of Poseidon Aquatic Resource Management Ltd were the principal authors. The report draws on a wide range of data and information sources provided in Appendix A. It has also been complemented with the help of email and telephone communication with various certification scheme managers, and with industry and government sources, as referenced accordingly in the text. Survey questionnaires were also completed with certified businesses in the supply chain and with certified producers in a number of small-scale and developing country fisheries. The help of those interviewed is gratefully acknowledged.

The draft report was presented and discussed at a UNEP Workshop on “Challenges for the Sustainable Consumption and Production of Fisheries Products: Eco-labelling, certification, and other supply chain issues” in Paris, France, 18-19 September 2008. This workshop was attended by 35 participants of all stages of the seafood supply chain including fishermen, wholesalers/traders, processors, retailers, NGOs and public institutions. This report benefited greatly from the comments provided by the participants. The workshop was organized by UNEP-DTIE with the help of Marie Christine Monfort of Marketing Seafood as part of her work on certification and labelling for SCP.

Demand for certified fisheries products has been gaining momentum and has moved from niche markets to becoming more mainstream. By addressing opportunities and challenges inherent in current certification practices, UNEP aims to identify future possibilities and required actions for building the capacity of various stakeholders who have the interest and potential to enhance the supply of and demand for sustainable fisheries products. This is one of a series of UNEP reports and activities aiming to contribute to a better understanding of the market-based tools, policies and instruments available and actions needed to turn around the serious decline in fisheries resources.

United Nations Environment Programme

The United Nations Environment Programme (UNEP) is the overall coordinating environmental organization of the United Nations system. Its mission is to provide leadership and encourage partnerships in caring for the environment by inspiring, informing and enabling nations and people to improve their quality of life without compromising that of future generations. In accordance with its mandate, UNEP works to observe, monitor and assess the state of the global environment, improve the scientific understanding of how environmental change occurs, and in turn, how such change can be managed by action-oriented national policies and international agreements. UNEP's capacity building work thus centers on helping countries strengthen environmental management in diverse areas that include freshwater and land resource management, the conservation and sustainable use of biodiversity, marine and coastal ecosystem management, and cleaner industrial production and eco-efficiency, among many others.

UNEP, which is headquartered in Nairobi, Kenya, marked its first 35 years of service in 2007. During this time, in partnership with a global array of collaborating organizations, UNEP has achieved major advances in the development of international environmental policy and law, environmental monitoring and assessment, and the understanding of the science of global change. This work also supports the successful development and implementation of the world's major environmental conventions. In parallel, UNEP administers several multilateral environmental agreements (MEAs) including the Vienna Convention's Montreal Protocol on Substances that Deplete the Ozone Layer, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (SBC), the Convention on Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention, PIC) and the Cartagena Protocol on Biosafety to the Convention on Biological Diversity as well as the Stockholm Convention on Persistent Organic Pollutants (POPs).

Division of Technology, Industry and Economics

The mission of the Division of Technology, Industry and Economics (DTIE) is to encourage decision makers in government, local authorities and industry to develop and adopt policies, strategies and practices that are cleaner and safer, make efficient use of natural resources, ensure environmentally sound management of chemicals, and reduce pollution and risks for humans and the environment. In addition, it seeks to enable implementation of conventions and international agreements and encourage the internalization of environmental costs. UNEP DTIE's strategy in carrying out these objectives is to influence decision-making through partnerships with other international organizations, governmental authorities, business and industry, and non-governmental organizations; facilitate knowledge management through networks; support implementation of conventions; and work closely with UNEP regional offices. The Division, with its Director and Division Office in Paris, consists of one centre and five branches located in Paris, Geneva and Osaka.

Economics and Trade Branch

The Economics and Trade Branch (ETB) is one of the five branches of DTIE. ETB seeks to support a transition to a green economy by enhancing the capacity of governments, businesses and civil society to integrate environmental considerations into economic, trade, and financial policies and practices. In so doing, ETB focuses its activities on:

1. Stimulating investment in green economic sectors;
2. Promoting integrated policy assessment and design;
3. Strengthening environmental management through subsidy reform;
4. Promoting mutually supportive trade and environment policies; and
5. Enhancing the role of the financial sector in sustainable development.

Over the last decade, ETB has been a leader in the area of economic and trade policy assessment through its projects and activities focused on building national capacities to undertake integrated assessments – a process for analyzing the economic, environmental and social effects of current and future policies, examining the linkages between these effects, and formulating policy response packages and measures aimed at promoting sustainable development. This work has provided countries with the necessary information and analysis to limit and mitigate negative consequences from economic and trade policies and to enhance positive effects. The assessment techniques and tools developed over the years are now being applied to assist countries in transitioning towards a green economy.

During the past decade, ETB has intensively worked on the issue of fisheries to promote integrated and well-informed responses to the need for fisheries policies reform. Through a series of workshops, analytic papers and country projects, ETB particularly seeks to improve the understanding of the impact of fisheries subsidies and to present policy options to address harmful impacts.

Sustainable Consumption and Production Branch

The Sustainable Consumption and Production (SCP) Branch is also part of DTIE. Its mission is to promote and facilitate the extraction, processing and consumption of natural resources in a more environmentally sustainable way over the whole life cycle.

The SCP Branch's work focuses on achieving increased understanding and implementation by public and private decision makers of policies and actions for SCP. Activities are focused on specific tools, encompassing policies, market-based instruments and voluntary approaches, with emphasis given to some specific economic sectors.

Emphasis is laid on identifying SCP challenges, responses and opportunities for developing countries (e.g. new markets for more sustainable products and poverty alleviation), and identifying and fulfilling capacity building needs. The SCP Branch works with public authorities,

international agencies, industry associations, and institutes to mainstream and support uptake and implementation of sustainable consumption and production patterns, approaches, practices and polices.

Project on "Promoting Sustainable Trade, Consumption and Production Patterns in the Fisheries Sector" (2006-2009)

This Norway-funded project is led by ETB and implemented in cooperation between ETB and SCP. It aims to assist and strengthen the capacities of governments and stakeholders to promote the sustainable management of fisheries and to contribute to poverty reduction. It further seeks to promote the role and capacity of the private sector, including industry, financial institutions and local fishing communities to adopt appropriate environmental standards and practices in their operations, and encourage the creation of public-private partnerships that develop effective marketing strategies for a sustainable production and consumption of fish products.

The work consists of a set of national and international capacity-building initiatives focusing on promoting fisheries subsidies reform at national and international level, as well as voluntary private sector initiatives, including certification and sustainable supply-chains. The work carried out within this frame includes analytical studies on issues discussed at the WTO, as well as on challenges and opportunities of voluntary private sector initiatives; country projects for capacity building and awareness raising at national level; and workshops at international and regional level to support trade negotiators and raise awareness among national policy-makers, as well as among private sector representatives.

For more information on this project and the report, please contact:

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For more information regarding UNEP ETB's work on fisheries subsidies and certification, please see *http://www.unep.ch/etb/areas/fisherySub.php* or contact Anja von Moltke.

For more information on the general programme, please contact the Economics and Trade Branch.

Acronyms and abbreviations

CBA	Cost Benefit Analysis
CCRF	Code of Conduct for Responsible Fisheries
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoC	Chain of Custody
FAD	Fish Aggregating Device
FAO	Food and Agriculture Organization of the United Nations
FoS	Friend of the Sea
ICCAT	International Commission for the Conservation of Atlantic Tunas
ISEAL	International Social and Environmental Labelling Alliance
ISO	International Organization for Standardization
ITQ	Individual Transferable Quota
MAC	Marine Aquarium Council
MSC	Marine Stewardship Council
TAC	Total Allowable Catch
UNEP	United Nations Environment Programme

Glossary of terms

Term	Explanation
Accreditation	Procedure by which a competent authority gives formal recognition that a qualified body or person is competent to carry out specific tasks (based on ISO/IEC Guide 2:1996, 12.11).
Accreditation body	Body that conducts and administers an accreditation system and grants accreditation (based on ISO Guide 2, 17.2) to certification bodies.
Audit / Audit body	Examination of records to formulate an audit opinion. The auditor examines documents and processes to substantiate the legitimacy of the certification process. 'Audit Body' means the body that carries out the audit. This may be an internal entity (i.e. the accreditation body) or an external entity.
Brand	A brand is a product, service, or concept that is publicly distinguished from other products, services, or concepts so that it can be easily communicated and usually marketed. Brands are often expressed in the form of logos, or consistency in product packaging. These logos or product packaging are used to convey a potentially wide range of product attributes in terms of provenance/source, quality, history, price, desirability and social aspirations.
Branding	Branding is the process of creating and disseminating the brand name. In the case of fisheries, branding can be applied to the entire output of a country, region or company, as well as to individual products. Branding may involve advertising and other marketing campaigns.
Certification	Procedure by which a third party gives written or equivalent assurance that a product, process or service conforms to specified requirements. Certification may be, as appropriate, based on a range of inspection activities which may include continuous inspection in the production chain (based on ISO Guide 2, 15.1.2 and Principles for Food Import and Export Certification and Inspection, CAC/GL 20).
Certification body	Competent and recognized body that conducts certification. A certification body may oversee certification activities carried out on its behalf by other bodies (based on ISO Guide 2, 15.2), and is accredited by the accreditation body to engage in certification.
Certification client	An individual, organization or group of organizations that makes a formal application for a fishery to be assessed against the standard.
Chain of custody	The set of measures which are designed to guarantee that the product put on the market and bearing the ecolabel logo is really a product coming from the certified fishery concerned. These

measures should thus cover both the tracking/traceability of the product all along the processing, distribution and marketing chain, as well as the proper tracking of the documentation (and control of the quantity concerned).

Eco-labelling Eco-labelling schemes entitle a fishery product to bear a distinctive logo or statement which certifies that the fish has been harvested in compliance with conservation and sustainability standards. The logo or statement is intended to make provision for informed decisions of purchasers whose choice can be relied upon to promote and stimulate the sustainable use of fishery resources.

Full assessment The process by which a fishery undergoes a detailed assessment against the principles and criteria of a particular standard. A full assessment will result in a decision whether or not to award a compliance certificate. Some schemes allow time-bound conditions to be attached to the award of the certificate.

Pre-assessment The process by which a fishery undergoes a broad assessment against the principles and criteria of a particular standard. The purpose of the pre-assessment is to identify the weaknesses of a fishery in order to judge whether to invest in a full assessment (see above).

Small-scale fisheries Small-scale fisheries can be broadly characterized as a dynamic and evolving sector employing labor intensive harvesting, processing and distribution technologies to exploit marine and inland water fishery resources. The activities of this sub-sector, conducted full-time or part-time, or just seasonally, are often targeted on supplying fish and fishery products to local and domestic markets, and for subsistence consumption. Export-oriented production, however, has increased in many small-scale fisheries during the last one to two decades because of greater market integration and globalization. While typically men are engaged in fishing and women in fish processing and marketing, women are also known to engage in near shore harvesting activities and men are known to engage in fish marketing and distribution. Other ancillary activities such as net-making, boatbuilding, engine repair and maintenance, etc. can provide additional fishery-related employment and income opportunities in marine and inland fishing communities. Small-scale fisheries operate at widely differing organizational levels ranging from self-employed single operators through informal micro-enterprises to formal sector businesses. This sub-sector, therefore, is not homogenous within and across countries and regions and

	attention to this fact is warranted when formulating strategies and policies for enhancing its contribution to food security and poverty alleviation (FAO, 2004).
Standard (for certification)	The standard for certification includes requirements, criteria and performance elements in a hierarchical arrangement. For each requirement, one or more substantive criteria are usually defined. For each criterion, one or more performance elements are usually provided for use in assessment.
Third-party	Person or body that is recognized as being independent of the parties involved.
Unit of certification	The "unit of certification" is the fishery for which certification is called for. The certification could encompass: the whole fishery, where a fishery refers to the activity of one particular gear-type or method leading to the harvest of one or more species; a sub-component of a fishery, for example a national fleet fishing a shared stock; or several fisheries operating on the same resources. The certification applies only to products derived from the "stock under consideration". In assessing compliance with certification standards, the impacts on the "stock under consideration" of all the fisheries utilizing that stock or stocks over their entire area of distribution are considered.

Executive Summary

i. Eighty percent of the world's fish stocks are classified as being fully exploited, over-exploited, or depleted, and only 1 percent of stocks are estimated to be recovering from depletion (FAO 2008). Despite a wide range of fisheries management tools being available, the status of the world's fish resources has continued to get worse, not better over time. This had led to an increasing emphasis in recent years on fiscal reform in fisheries, and there are now moves towards greater 'market discipline' in the sector as a way of contributing towards a transition to responsible fisheries, for example through the reduction in subsidies. An adjunct to this interest in fiscal reform is the use of market-based trade measures to bring about improved fisheries management. One such measure is the use of certification or eco-labelling of fisheries products, given its potential ability to act as a driver for improved management and enhanced consumer demand for sustainable fish products.

ii. Much of the interest in certification as a market-based initiative stems from the fact that certified products can be traded globally, and the value of international seafood trade has been growing rapidly in recent years. Hidden within global trade figures is the increasing importance of trade by and within developing countries. Thus, if certification can be used as an incentive to bring about improved fisheries management through the resulting benefits that might accrue to those involved, its application in developing countries may be especially useful given their increasing levels of trade and often poor fisheries management. A focus on developing countries in turn suggests special consideration of the potential for certification in small-scale fisheries. Around 90 percent of the 38 million people recorded globally as fishers are classified as small-scale, and an additional 100+ million people are estimated to be involved in the small-scale post-harvest sector (Béné, Macfadyen and Allison, 2007).

iii. Resulting improvements in fisheries management from certification could result not just in the environmental benefits which are the main motivation for those establishing environmental certification schemes, but also potentially in significant contributions to both poverty alleviation and food security in developing countries through guaranteeing the long-term availability of fish stocks, increased long-term value-added and improved trade. This could contribute significantly towards fulfillment of the Millennium Development Goals. Certification and eco-labelling thus have the potential to generate environmental, social, and economic benefits.

iv. UNEP[1] is implementing a project (Promoting Sustainable Trade, Consumption and Production Patterns in the Fisheries Sector) which aims at assisting and strengthening the capacities of governments and stakeholders to promote the sustainable management of fisheries and to contribute to poverty reduction. Technical components of the project include work on: fisheries access agreements; subsidies; supply chain issues; and public and private sector initiatives to enhance consumer demand for sustainable fisheries products. This paper forms an output in relation to the technical component on public and private sector initiatives to enhance consumer demand for sustainable fisheries products.

v. The main concern of this paper is a consideration of the hypothetical and actual benefits of certification and eco-labelling. The paper focuses on environmental certification of capture

[1] Jointly implemented by the Economics and Trade Branch and the Sustainable Consumption and Production Branch

fisheries (rather than social and/or aquaculture certification), and has a strong focus on developing countries based on the reasoning provided in the background discussion above.

vi. The paper starts by briefly considering the FAO and proposed EC Guidelines for Eco-labelling, as well as a number of consumer guides and alliances aimed at promoting sustainable fisheries. However, the main focus of the paper is on private sector certification and eco-labelling schemes, and the claims made by private sector retailers and others about environmental sustainability and sustainable sourcing of fish products. The paper therefore profiles in some detail the wide range of environmental certification initiatives such as the Marine Stewardship Council (MSC), the Friend of the Sea Scheme (FoS), and others. This profiling includes the main characteristics of the schemes, and where possible their extent/coverage. Detail is also provided on the claims and commitments made by retailers and fish buyers in relation to sustainable sourcing. What is very striking is the very rapid rise in the volume/value of certified products and the ambitious targets for sustainable sourcing that have emerged, especially over the last two-three years.

vii. To date, governments have not been extensively involved in fisheries certification issues, and developments have been strongly driven by the private sector and civil society. However, government involvement in certification has included the initiation of, and support for, a number of specific mandatory import/export schemes relating to sustainability. Other public policy initiatives of relevance to certification include the ongoing international developments and negotiations at the World Trade Organization to reduce subsidies, due to their potentially negative effects on sustainability. Many certification schemes and national management instruments refer to international codes of conduct, such as the FAO CCRF, to which countries have signed up. Certification schemes themselves also typically require the assessment process to consider compliance with national laws, and in many cases governments thus define at least the minimum requirements for certification. Governments can, and do, also play a crucial role in defining and supporting sustainable management practices, and in assisting with capacity development of those wishing to engage in certification schemes.

viii. The perceived and actual benefits of certification differ for different stakeholder groups, and are summarised in the table below.

Expected benefit / Stakeholder	Retailers/ food service sector	Consumers	Producers
Price increases	✓		✓
Improved client relationships	✓		✓
Improved management resulting in longer-term sustainability	✓	✓	✓
Better knowledge of provenance/ source	✓	✓	
Continued/improved access to markets			✓
Improved public image	✓		✓
Product differentiation and market segmentation	✓		✓

ix. The extent to which such benefits are actually realized (i.e. the success of certification, as defined by the motivations and perceived benefits of different stakeholder groups) is explored through a literature review, through personal communication with certification scheme managers, and through web-based questionnaires with a) small-scale producers and b) business suppliers, that have been certified under different schemes. It is perhaps noteworthy from the table above that 'improved management resulting in long-term sustainability' is the only anticipated benefit that is relevant to all three stakeholder groups. Particular emphasis is therefore placed on a consideration of the extent to which certification and eco-labelling can actually bring about improved fisheries management, based on the evidence to date. An assessment is also made of a number of potential constraints to the greater uptake of certification in developing countries.

x. The resulting analysis leads to a number of conclusions and recommendations, as follows:

- Demand for certified fish products is suddenly gaining significant momentum. It seems likely that the sale of certified products may be changing from a niche marketing issue, to one that is much more mainstream. Certainly certification and eco-labelling are here to stay;
- Demand for certification is being most strongly driven by retailers (rather than by producers), many of which have now made public commitments about sustainable sourcing policies. These retailers have significant market power and an ability to influence their suppliers;
- Demand for certified products is not uniform between countries, market segments (e.g. retail vs food service sector), individual businesses, or species. These differences in demand are significant and are likely to remain in the future, even if reduced to some extent as overall demand for certification grows;
- Demand already far outstrips the availability of certified products;
- It is possible, but not yet clear, that there may be some consolidation in the market for eco-labels, given a) retailer desire not to confuse consumers with a plethora of different labels, and b) the relative costs and benefits of the different schemes. Different certification schemes are private sector run initiatives (even if designed to generate public benefits) competing with each other. The growing interest in certification could mean that there is even more room in the market for more labels, if the existing schemes are unable to keep up with the growing demand for certified products. However, it is also possible that in the medium- to long-term, a relatively small number of labels may come to dominate the market based on their respective costs and benefits. Certainly at the present time, the MSC label is seen as something of the 'gold standard' of eco-labels. However, the significantly lower costs of the FoS scheme, mean that the respective increases in sales volumes/values of certified products by these two schemes, and by others, will make for interesting viewing in the coming years.
- The burden of costs involved with certification are far greater for the fisheries being certified, than for the businesses in the supply chain obtaining chain of custody certification;

- While certification schemes have so far tended to focus on fisheries that are already well managed, certification does appear to offer some potential to affect fisheries management improvements, and less well managed fisheries are increasingly likely to seek certification in the future, given the increases in demand for certified products;
- Certification can also offer other benefits to producers in the form of improved or maintained market access, and potentially price improvements. While good systematic and quantitative evidence for the latter benefit is not generally available, the growing imbalance between demand for, and supply of certified products, may be taken as evidence for some price impacts;
- However, the challenges for developing country fisheries in becoming certified are numerous. These challenges in turn provide an array of entry points for those wishing to support certification. Different entry points may be applicable to different stakeholders. For example, if retailers are serious about obtaining more certified products they may have to combine consumer campaigns to increase consumer willingness to pay, with ensuring that price premiums for certified products are distributed through the supply chain and reach the producer. For scheme managers themselves, efforts to simplify certification (without compromising on standards), reduce the costs of certification, and build momentum with consumers and retailers in developing countries, may be most important. For UNEP, possible relevant entry-points could include the provision of support and capacity building for management improvements, improved data collection and its use, certification itself, and pre- and post-certification studies on management practices to demonstrate changes and resulting benefits from certification;
- Many of these entry points should not be dealt with by one type of stakeholder alone, but should rather be pursued through joint public-private sector engagement. Such an approach is likely to increase the uptake of certification and to maximize its benefits; and
- Further work needs to be conducted to explore the relationship between sustainability criteria being developed in WTO negotiations for subsidy reform, the FAO Eco-Labelling Guidelines, and the criteria used in the main eco-labels, so as to ensure coherence and effectiveness between these different initiatives.

xi. It is against this background that UNEP is encouraged to continue its support for certification in developing countries. Future activities to support certification under the project 'Promoting Sustainable Trade, Consumption and Production Patterns in the Fisheries Sector' can be recommended, given the potential of certification to promote sustainable management and the fact that sustainable management is an aim of the project. Support is especially necessary given current constraints to certification, and the poor state of fisheries management in many developing countries. By way of example, specific project activities supported by UNEP in any one country could include a wide range of activities aimed at minimizing the current constraints to certification, such as:

- A review of data quality, collection methods, storage, and subsequent analysis and use for improved management, so as to comply with best-practice;
- Training and "gap analysis" on any mismatch between current management regimes and practices compared to the certification criteria of particular certification schemes that a country may wish to pursue, and compared to the FAO Code of Conduct for Responsible Fisheries.
- Support for a joint private-public sector advisory group tasked with developing and implementing a certification programme for relevant fisheries in a particular country. The members of this advisory group would be formally invited/selected by the relevant government ministry, and would primarily be constituted of national stakeholders from both private and public sectors. However, governments should also consider participation and representation by staff from relevant bilateral and multi-national organisations, and such organisations could also provide support to the advisory group in the form of funding and capacity building. The principle roles of the advisory group could be to:
  - assess the appropriateness of different fisheries for certification (based on management practices, volumes and values of products, interest in certification in destination markets, etc)
  - leverage funding for the certification process
  - generate joint private-public support for any necessary changes to management and exploitation practices, and
  - assign specific responsibilities to different parties to ensure that certification is successfully completed.

xii. An important element of such in-country advisory groups in terms of generating support for certification in other countries, would be to carefully document their own activities, the management changes that resulted throughout the certification process, and other resulting benefits that accrued to different stakeholders.

xiii. Support for certification is also directly linked to the UNEP project component on fisheries subsidies reform, given that the reduction of subsidies, like certification, can be expected to contribute to a reduction in unsustainable fishing practices. Other linkages include the fact that the MSC management system criteria for assessment include a requirement that the management system 'provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing', while suggested sustainability criteria for fisheries subsidies reform at the WTO and beyond[2] refer to the FAO Eco-Labelling Guidelines since the latter contain basic management standards.

[2] See: UNEP and WWF (2007): Sustainability Criteria for Fisheries Subsidies – Options for the WTO and Beyond, available at: www.unep.ch/etb

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1. Introduction

1.1 Background

A large proportion of the world's fish stocks are fully exploited, over-exploited, or depleted. Since FAO started monitoring the global state of stocks in 1974, there has been a consistent downward trend in the proportion of under-exploited and moderately exploited stock groups which could perhaps produce more, from almost 40 percent in 1974 to 23 percent in 2005. At the same time, there has been an increasing trend in the proportion of overexploited and depleted stocks, from about 10 percent in the mid-1970s to around 25 percent in the early 1990s, where it has stabilized until the present. The proportion of fully exploited stocks producing catches that are close to their maximum sustainable limits with no room for further expansion, declined from slightly over 50 percent in 1974 to around 45 percent in the early 1990s, increasing to 52 percent in 2005. Only 1 percent of stocks are estimated to be recovering from depletion (FAO, 2006).

It is perhaps most striking from these figures that a) only 4 percent of the stock groups which are overexploited or depleted are recovering from depletion, and b) the status of the world's fish resources has continued to get worse, not better over time. This is worrying when one considers both the long and well-publicized history of over-fishing and the wide range of fisheries management tools available to policy makers. These fisheries management tools are not discussed here in any detail as they are profiled extensively elsewhere (See FAO 1997, FAO 2003, and Cochrane 2002), but they are often grouped into:

- Technical regulations relating to fishing gear (such as mesh size);
- Technical regulations related to area or time restrictions which restrict access to an area by fishers in some way;
- Input or fishing effort controls such as the number and size of fishing vessels (fishing capacity controls), the amount of time fishing vessels are allowed to fish (vessel usage controls), or the product of capacity and usage (fishing effort controls); and
- Output or catch controls such as ITQs, which limit the tonnage of fish or the number of fish that may be caught from a fishery in a period of time

The successful implementation of such management measures to improve the status of fish resources has been constrained by, amongst other things, financial incentives for fishermen to break regulations, a lack of sufficient monitoring control and surveillance (MCS) and difficulties in enforcing some forms of regulation, poor institutional capacity, insufficient funding provided for fisheries management, and in many cases the use of subsidies which have artificially supported the financial viability of fishing operations.

The failure of many of these traditional management measures has resulted in an increasing emphasis in recent years on fiscal reform in fisheries. As a result, financial aspects of fisheries are gaining increasing recognition, and there are moves towards greater 'market discipline' in

the sector as a way of contributing towards a transition to responsible fisheries, as evidenced by the recent focus on issues such as the withdrawal of subsidies, the strengthening of use rights, the substitution of grants with loans, cost-recovery programmes and a greater emphasis on the capture of resource rents. (Béné, Macfadyen and Allison, 2007).

An adjunct to this interest in fiscal reform, is the use of market-based trade measures to bring about improved fisheries management. One such measure is the use of certification or eco-labelling of fisheries products, given its potential ability to act as a driver for improved management and enhanced consumer demand for sustainable fish products. Due to the perceived benefits (discussed later in this paper) there is increasing interest in certification by both the private sector (catching, processing/trading, retailing/wholesaling, and civil society/consumers) and governments. Both groups have a potential role to play in supporting certification initiatives.

Much of the interest in certification as a market-based initiative stems from the fact that certified products can be traded globally, and the value of international seafood trade has been growing rapidly in recent years. In 2004, total world trade of fish and fishery products reached a record value of US$72 billion (export value), representing a 23 percent growth relative to 2000 and a 51 percent increase since 1994. Estimates for 2005 indicate a further increase in the value of fishery exports (FAO, 2006). Hidden within these trade figures are the increasing importance of trade by and within developing countries, and in 2001 for the first time developing countries accounted for more than half of total global export values (Kurien, 2004).

Thus, if certification can be used as an incentive to bring about improved fisheries management through the resulting benefits that might accrue to those involved, its application in developing countries may be especially useful given their increasing levels of trade and often poor fisheries management[3]. A focus on developing countries in turn suggests special consideration of the potential for certification in small-scale fisheries. Around 90 percent of the 38 million people recorded globally as fishers are classified as small-scale, and an additional 100+ million people are estimated to be involved in the small-scale post-harvest sector (Béné, Macfadyen and Allison, 2007).

Resulting improvements in fisheries management from certification could result not just in the environmental benefits which are the main motivation for those establishing environmental certification schemes, but also potentially in significant contributions to both poverty alleviation and food security in developing countries through guaranteeing the long-term availability of fish stocks, increased long-term value-added[4] and improved trade. This could contribute significantly towards fulfillment of the Millennium Development Goals. Certification thus has the potential to generate environmental, social, and economic benefits.

[3] Note this is not meant to imply that fisheries management in many developed countries does not also require significant improvement

[4] Profit plus wages

1.2 Objectives and scope of this paper

UNEP[5] is implementing a project (Promoting Sustainable Trade, Consumption and Production Patterns in the Fisheries Sector) which aims at assisting and strengthening the capacities of governments and stakeholders to promote the sustainable management of fisheries and to contribute to poverty reduction. Technical components of this project include work on: fisheries access agreements; subsidies; supply chain issues; and public and private sector initiatives to enhance consumer demand for sustainable fisheries products.

This paper forms an output in relation to the technical component on public and private sector initiatives to enhance consumer demand for sustainable fisheries products. It ties in with a focus of the project to promote the role and capacity of the private sector, financial institutions, and local fishing communities to adopt appropriate environmental standards and practices in their operations, and to construct public-private partnerships that develop effective marketing strategies for sustainable production and consumption of wild-caught fish products.

The main objective of this report is to provide technical support and advice on:

- Identifying the key characteristics (both successful and unsuccessful) of initiatives implemented in the field of sustainable fisheries products;
- Identifying key incentives, technical support and capacity building requirements for fisheries in developing countries (especially, but not exclusively small-scale fisheries) to engage in certification/eco-labelling processes; and
- Future UNEP activities in relation to the issues of certification/eco-labelling, and in particular the specification of demonstration projects/case studies planned for later in the project under the technical component on public and private sector initiatives to enhance consumer demand for sustainable fisheries products.

The main concern of this paper is a consideration of the hypothetical and actual benefits of certification, and labelling where this relates to certified products. However, while concentrating on *certification*, the paper also provides some brief comment on eco-labelling *guidelines, consumer guides, and retailer self-assessments of sustainability*. These initiatives are profiled but not considered in detail because they are not initiatives with which producers in developing countries can actively engage – rather they are statements or self-assessments made by others, typically in developed countries.

The paper also focuses on environmental certification only, and not the very few social certification initiatives in fisheries that have been attempted, without much success. These include the Fair Fish scheme and the Fairly Traded Fish and Seafood Initiative. The former has been concentrating its efforts in the disadvantaged region of the Saloum area, in the far South of Senegal, next to the Northern boarder of Gambia, with sales to Migros in Switzerland. However, the scheme has not been

[5] Jointly implemented by the Economics and Trade Branch and the Sustainable Consumption and Production Branch

financially self-sustaining[6]. The latter initiative failed because the partner organizations[7] experienced a wide range of problems related to: maintaining the quality of fresh fish exports; logistics/transport; documentation; matching supplies of products/species demanded in Europe and irregular supplies.[8]

The paper has a strong focus on experiences in developing countries based on the reasoning provided in the background discussion above, and based on the overall project document. However, given the focus also on small-scale fisheries in developing countries, the review also considers certification of small-scale fisheries in developed countries in an attempt to identify any key lessons learned that may be generic to small-scale fisheries, irrespective of whether they are in developed or developing countries.

The paper is concerned with capture fisheries only, and does not include any information on certification schemes in aquaculture.

1.3 Structure of this paper

Following this introductory section (Section 1), Section 2 of this paper profiles the wide range of environmental certification and trade initiatives, including certification and claims made about environmental sustainability used in the marketing of seafood and fish products. This profiling includes the main characteristics of the schemes, and where possible their extent/coverage.

Section 3 then provides some discussion of the benefits of certification to different stakeholder groups, and the constraints to greater uptake in developing countries. In particular, it considers the extent to which schemes might be viewed as being 'successful' in terms of realizing different benefits. Of course, a consideration of 'success' depends on the stakeholder concerned and the extent to which certification actually results in benefits as expected/desired. And as this section notes, the expected/actual benefits differ between stakeholder groups. It is noteworthy that 'improved management resulting in long-term sustainability' is perhaps the only anticipated benefit that is relevant to all stakeholder groups. Particular emphasis is therefore placed on a consideration of the extent to which certification and eco-labelling can actually bring about improved fisheries management, based on the evidence to date. The section concludes with some 'crystal-ball gazing' about the future prospects for certification, based on experiences in recent years.

Section 4 discusses some possible solutions as to ways of increasing certification in developing countries. A final section (Section 5) provides some conclusions about certification, and some recommendations for future UNEP activities in relation to certification and eco-labelling.

6 Pers. Comm Scheme managers, 2007

7 SIFFS (India) and CNPS/CREDETIP (Senegal)

8 Source: the International Collective in Support of Fishworkers (ICSF) and the South Indian Federation of Fishermen Societies (SIFFS)

2. Identification of main schemes, their key characteristics, extent / coverage, and promotional efforts

There is now a wide range of market-based measures being used to promote sustainable fishery products and support public sector policies on sustainable fishery management.

This section starts by presenting some information on a) third party non-fisheries specific environmental certification schemes, b) fisheries-specific codes of practice or guidelines, and c) fisheries-specific consumer guides and organizations/alliances. Discussion is brief on these initiatives as they are not initiatives with which fisheries producers can choose to engage (i.e. they are non-fisheries specific, general guidelines, or assessments made independently by others about a fishery's sustainability), but additional information is included in Appendix E. The section then reviews in more detail the main certification schemes already operating or under development in terms of their key characteristics, extent/coverage, and promotional efforts. These schemes have been set up by various parties with the intention of promoting/enhancing sustainable fisheries. Their number, and the volume of certified products has been rising rapidly in recent years, and especially within the last 2-3 years. The schemes reviewed include the Marine Stewardship Council, the Friend of the Sea, dolphin 'friendly/safe' tuna, the Marine Aquarium Council, Naturland, Marine Eco-Label of Japan, Krav, and the UK's Seafish Responsible Fishing Scheme. (Discussion on the relative benefits/successes of these schemes is provided later in Section 3). This section also provides information on retailer/foodservice/wholesale/processing sector buying policies related to sustainability of fisheries, as an increasing number of companies are making public statements about sustainable buying policies. The section concludes with some information on public policy initiatives related to certification and eco-labelling.

2.1 Sustainability initiatives

In addition to the schemes outlined in Section 2.2 below, and the self-assessments made in Section 2.3, there are a number of other initiatives that aim to promote sustainability of seafood catches, or environmental sustainability more generally. Additional information on such initiatives is provided in Appendix E. They include:

- *Third party non-fisheries specific environmental certification schemes*, such as European Eco-Management and Audit Scheme (EMAS), ISEAL, and ISO. These schemes are not specifically capture fisheries-related[9] but may be adopted by firms operating in the fisheries sector or selling fish products[10];

[9] GLOBALGAP is an additional scheme of this nature, but is only for aquaculture

[10] Note that the extent to which such labels are used on fish products, if at all, is not known

- *Fisheries-specific codes of practice or guidelines*, such as the FAO Code of Conduct for Responsible Fisheries (see 3.4 for more discussion), the International Standard for the Trade in Live Reef Food Fish, the European Commission work on eco-labelling of responsible fishing, and the FAO Guidelines for the Eco-labelling of Fish and Fishery Products from Marine Capture Fisheries; and
- *Fisheries-specific consumer guides and organizations/alliances*.

In particular, it is worth highlighting both the proposed EC Guidelines on eco-labelling under development, and the FAO Guidelines on Eco-labelling (FAO, 2005). The FAO guidelines can be taken as a benchmark of best practice for those establishing eco-labels and certification schemes in the fisheries sector. They are applicable to eco-labelling schemes that are designed to certify and promote labels for products from well-managed marine capture fisheries and focus on issues related to the sustainable use of fisheries resources. The guidelines refer to principles, general considerations, terms and definitions, minimum substantive requirements and criteria, and procedural and institutional aspects of eco-labelling of fish and fishery products from marine capture fisheries. Some comment is provided in Section 3.4 on the extent to which the different certification schemes described in Section 2.2 are coherent with the FAO Guidelines, as such coherence is likely to be a factor influencing whether different schemes can in fact bring about improvements in fisheries management.

It is also appropriate to note that brands/branding allows producers and retailers to promote certain qualities of a product that are often purported to be unique or otherwise sought after. Branding can involve both third party certification, and own-brands. Branding a product can be used to convey many messages to consumers, including issues related to aspirational qualities, environmental issues, quality, and the provenance/source of products (i.e. a particular company, a region or a country). Both third-party certification labels, and self-declared eco-labels not involving certification or third-party assessment, can be thought of as a form of branding. Typically however, guarantees or implications of good quality are often paramount in branding exercises that do not involve the use of certification labels, rather than those of sustainability, as it is through such an emphasis that producers/retailers attempt to capture market share and add value through generating price premiums.

2.2 Third-party fisheries environmental certification schemes

The following table summarizes in brief the main third-party fisheries environmental schemes, with the subsequent text providing additional detail on each scheme.

Table 1: Third-party fisheries environmental schemes

Scheme	Comment
Marine Stewardship Council	**Scope: Assessment of capture fisheries resource sustainability, ecosystem impacts and management system robustness.** Now perhaps the best known of the environmental schemes for capture fisheries. Incorporating a process of third party certification of fisheries and supply chains, and the use of labels. The MSC is an independent, global, non-profit organization whose role is to recognize well-managed fisheries and to harness consumer preference for seafood products bearing the MSC label of approval. In order to use the MSC logo on seafood products it is first necessary to be certified for chain of custody. This involves an independent certification body assessing the applicant's traceability systems and ensuring they are sourcing from certified suppliers. www.msc.org
Friend of the Sea	**Scope: Sustainable fisheries (and aquaculture) production based on published data.** The Friend of the Sea scheme was initiated in 2005, and works closer to the point of sale than production, by approving products if (a) target stocks are not overexploited; (b) fisheries use fishing methods which do not impact the seabed and (c) they generate less than 8 percent discards (the global average as per recent FAO publications). Products/fisheries are audited and certified against published information/data, following application by fisheries using a standard application form. Fisheries are assessed against: FAO data on stock status in different fisheries areas; the IUCN red list of endangered species; fishing gear types felt to be harmful to the seabed; IUU and Flags of Convenience; and compliance with TACs, use of the precautionary principle, and national legislation. Bureau Veritas (www.bureauveritas.com) checks chain of custody (traceability and documental evidence) and actual fishing method (including legal compliance – e.g. Minimum size, TAC, IUU, FOC, mesh size, etc.) www.friendofthesea.org

Marine Aquarium Council	**Scope: Assessment of aquarium animal resource sustainability, including impacts of collection and post-harvest quality of care.** The MAC is an international, 'not-for-profit' organization that brings marine aquarium animal collectors, exporters, importers and retailers together with aquarium keepers, public aquariums, conservation organizations and government agencies. MAC's mission is to conserve coral reefs and other marine ecosystems by creating standards and certification for those engaged in the collection and care of ornamental marine life from reef to aquarium. The MAC Core Standards outline the requirements for third-party certification of quality and sustainability in the marine aquarium industry from reef to retail. MAC Certification covers both practices (industry operators, facilities and collection areas) and products (aquarium organisms). For Certification of Practices industry operators at any link in the chain of custody (collectors, exporters, importers, retailers, etc.) can seek to be certified by being evaluated for compliance with the appropriate MAC Standard. For Certification of Products MAC certified marine ornamentals must be harvested from a certified collection area and pass from one certified operation to another, e.g., from collector to exporter to importer to retailer. MAC certified marine organisms bear the 'MAC Certified' label on the tanks and boxes in which they are kept and shipped. http://www.aquariumcouncil.org
Naturland Association	**Scope: Proposed scheme for certification of sustainable wild fisheries production.** Naturland promotes organic agriculture, and has to date only been involved with certification of aquaculture operations. However, they recently initiated a wild fisheries certification scheme, starting with a trial certification programme in Tanzania on Lake Victoria. Standards address both environmental and social aspects. Products will be labelled so as to enable the trader legally responsible for the product to be identified, and the use of the Naturland logo "Wildfisch" will be governed by a licence agreement. http://www.naturland.de/naturland_fish.html

"Dolphin-safe/dolphin-friendly" labelled tuna	**Scope: Determines the level of interaction with dolphins and other cetaceans in the capture of tuna.** This label is meant to certify that the tuna was caught in a way that protects dolphins, either based on the Agreement on the International Dolphin Conservation Program (AIDCP), a multilateral agreement under the IATTC Regional Fisheries Organization, or in line with a programme promoted by the Earth Island Institute (EII), a US based non-governmental organization.
Marine Eco-Label (Japan)	**Scope: Capture fishery performance as measured against management systems, the stock or stocks for which certification is being sought, and consideration of any serious impacts of the fishery on the ecosystem.** A domestic Japanese fisheries certification approach, the 'MEL-Japan' scheme has just commenced (December 2007). Standards are closely based on the FAO guidelines but not yet available in English.
KRAV	**Scope: Certification of capture fishery and vessels against environmental criteria.** The KRAV standards include all parts of the chain of custody from the fishery to the retailers, and certification involves assessment of the fishery followed by individual vessel certification. Limited to a few fisheries in northern Europe. http://standards.krav.se
UK Seafish Responsible Fisheries Scheme	**Scope: Assessment of individual vessel performance.** Provides a means of recognizing responsible fishing practices *for individual* vessels operating in a mixed fishery, controlled under international agreements. It is meant to develop, promote and bring reward for good practice. Only relevant to the UK at the moment, but Seafish are also currently in the process of developing a Good Practice Guide for longline fisheries in Sri Lanka, which is intended to have worldwide applicability. http://rfs.seafish.org/

The Marine Stewardship Council (MSC) is an independent, global, non-profit organization, established in 1997 and becoming independent in 1999, whose role is to recognize well-managed fisheries and to harness consumer preference for seafood products bearing the MSC label of approval. Its scope covers an assessment (through a pre-assessment and a full-assessment) of capture fisheries resource sustainability, ecosystem impacts and management system robustness, based on performance against the MSC principles and criteria (provided in Appendix B). This assessment involves not just a review of published data, but also direct discussions with stakeholders in the country concerned, and the assessment process can make recommendations/ requirements for improvements in order for certification to be approved and maintained. By April 2009 there are 46 MSC-certified fisheries (with two in developing countries and one of the two being a small-scale fishery), and a record number of in total 102 fisheries from around the world, many of which were multiple units, entered full assessment under the MSC programme. As of April 2009, the estimated retail value of seafood products bearing the Marine Stewardship Council (MSC) logo is estimated around 1.4 billion US dollars annually. These numbers, based on extrapolation of half-year figures, confirm a continued trend of steady year-on-year growth at around $0.4 billion[11]. As of April 2009 over 7 percent of the world's edible wild-capture fisheries by volume were engaged in the programme, either as certified fisheries or in full assessment against the MSC standard for a sustainable fishery.[12] While the quantitative increase is not clear in the value of internationally traded seafood products that would result if all those fisheries currently engaged in the programme were certified, it is sure to represent a significant increase.

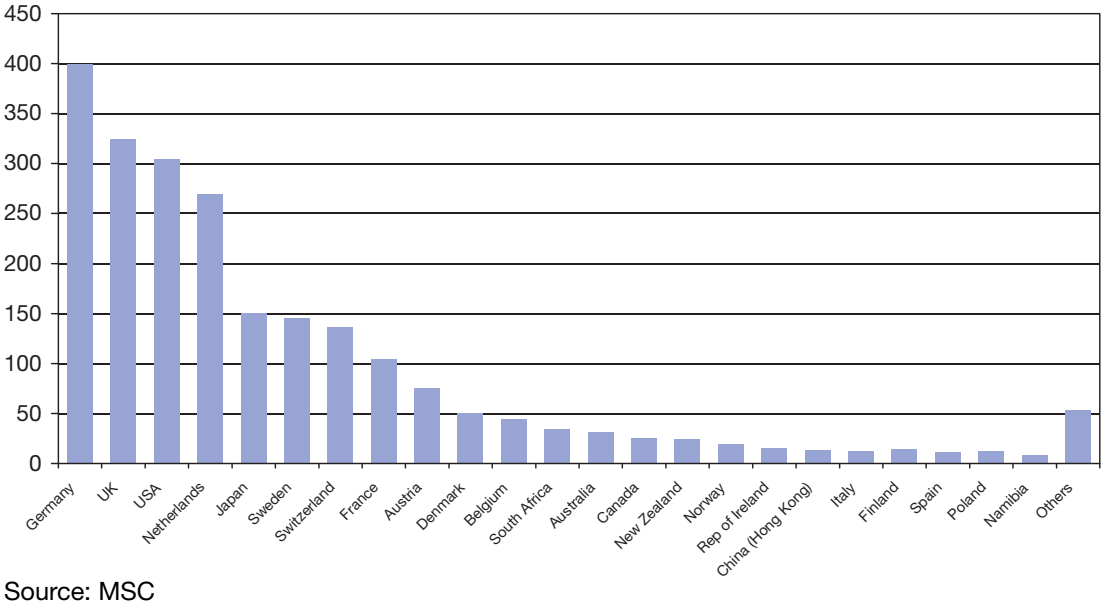
In order to use the MSC logo on seafood products it is necessary to be certified for chain of custody. This involves an independent certification body assessing the applicant's traceability systems and ensuring they are sourcing from certified suppliers. This initial audit is valid for five years with annual surveillance audits. By April 2009 there were over 110 certified business-to-business suppliers in Asia/Pacific, 430 in Europe, 250 in North America, 10 in Africa, and 4 in South America[13]. As of March 2009 the number of MSC-labelled products on sale worldwide was 2,283, with sales of over 250 million items, up from 18 products at the mid-point in 2001, 73 in 2002, 164 in 2003, 218 in 2004, 263 in 2005, and 379 in 2006, and 608 in 2007. The number of labelled products being sold in different countries is strongly concentrated in developed country markets such as the USA, UK, Switzerland, Germany, Sweden, Australia, New Zealand, Japan, France, Belgium and Austria, along with others. The only developing countries where significant numbers of labelled products are sold are Namibia, South Africa, based on certification of the South African hake fishery and China (Hong Kong and mainland).

[11] MSC Annual Reports 2006/07 and 2007/08

[12] www.msc.org and based on 2005 numbers from the FAO's Fisheries Global Information System (FIGIS)

[13] MSC Annual Report 2006/07

Figure 1: MSC-labelled product lines as at 30th March 2009



Source: MSC

MSC has spent around US$30 million on developing the standard[14], and after a fairly slow start in building momentum around the scheme, the last couple of years have seen a significant rise in certified fisheries, fisheries under-going certification, and sales of labelled products. Main efforts to promote the scheme have included extensive outreach efforts by staff in MSC offices. The outreach programme includes visits to a broad range of stakeholders including: fishers; processors; retailers; management agencies; and government officials. Outreach also includes discussions with conservation groups and representatives from the general community. Specifically with regard to promoting the MSC initiative in developing countries, the MSC has a "Developing World Fisheries Programme". This programme seeks to:

- Increase developing country stakeholder awareness and involvement in the MSC; and
- Ensure continued relevance and application of the MSC Standard and programme to developing country fisheries

Dedicated developing world outreach operates from the MSC's headquarters and regional offices. An Africa and Middle East outreach programme operates from the MSC's international headquarters in the United Kingdom. A South East Asia and Pacific Island area outreach programme operates from the regional office in Australia and a Central and South America outreach programme operates from the MSC regional office in the USA. The MSC works to create awareness about fisheries eco-labelling and the role of the MSC through workshops, participation in formal and informal local meetings and development of communication materials. Training to improve capacity of stakeholders to engage in certification and working with developing country

[14] MSC, Pers. Comm. 2007

partners to develop strategies to engage in the MSC programme also forms part of the MSC's outreach in the developing world. Some of the countries where recent outreach activities of this nature have been conducted include the Gambia, Tanzania, India, Ecuador, Venezuela, Vietnam, Argentina, China, Malaysia, Papua New Guinea, Thailand and Mexico.

MSC has also embarked on a project to develop guidelines for the assessment of small-scale and data-deficient fisheries, which are due for completion by the end of 2008. The project aims to develop guidance for certifiers on the use of the type of information that may be available to such fisheries, including the use of traditional ecological knowledge and traditional management systems. The MSC is also developing guidance around the use of risk based approach to assessment which will enable the use of qualitative information and reduce as appropriate the requirement for complex scientific data when evaluating fishery performance.

Of special interest to this report is the MSC Quality and Consistency project. This project will result in standard performance indicators and scoring guideposts for fisheries assessments by July 2008. These will provide fisheries with greater clarity about what the MSC process actually entails before they enter assessment, and will help them understand the level of performance they need to become certified. This is potentially good news for developing country fisheries as it will provide clearer information than is presently available on which to base decision-making as to whether to enter the assessment process or not.

Friend of the Sea (FoS) was established in 2005 and reviews the sustainability of fisheries (and aquaculture) production based on published data. The Friend of the Sea scheme works by approving fisheries/products if (a) target stocks are not overexploited; (b) fisheries use fishing methods which do not impact the seabed and (c) they generate less than 8 percent discards (the global average estimated in FAO publications). Products/fisheries are audited and certified against published information/data, following application by fisheries using a standard application form. Bureau Veritas or SGS checks chain of custody (traceability and documental evidence) and actual fishing method and compliance with legal standards. Fisheries are assessed against: FAO data on stock status in different fisheries areas; the IUCN red list of endangered species; fishing gear types felt to be harmful to the seabed; IUU and Flags of Convenience; and compliance with TACs, use of the precautionary principle, and national legislation. There are around 60 capture fisheries products already approved under the scheme. FoS-labelled products are now sold in Australia, Belgium, Czech Republic, France (including Martinique, Guadeloupe, Mayotte, Guyana and New Caledonia), Germany, Greece, Italy, Japan, Luxemburg, Mauritius, New Caledonia, Norway, Poland, Portugal, Reunion Islands, Romania, Spain, Switzerland, Turkey, UK, and the USA. The only fish from a developing country to have been certified, is a mixed fishery in Senegal. A mixed fishery has also been certified in the Azores, a Portuguese Objective 1[15]

[15] Defined as having a GDP per capita of less than 75 percent of the EU average

autonomous region. Scheme organisers declined to provide information to the consultants about the current value of sales of FoS-labelled products.

'Dolphin-friendly/safe' tuna determines the level of interaction with dolphins and other cetaceans in the capture of tuna. Labels are meant to certify that the tuna was caught in a way that protects dolphins, either based on the Agreement on the International Dolphin Conservation Program (AIDCP), a US Department of Commerce label, a multilateral agreement under the IATTC Regional Fisheries Organization, or in line with a programme promoted by the Earth Island Institute (EII), a US based non-governmental organization. The latter is perhaps the best established. In order to ensure companies and tuna consumers that tuna is caught in a "Dolphin Safe" manner, EII established an International Monitoring Program in 1990 to monitor catches and shipments around the world. All fishing and carrier vessels; all processing, storage, and transshipment facilities; and all procurement records related to the purchase, processing, storage, transport, and sale of tuna must be made available for independent EII-approved monitoring. Earth Island Institute now maintains international monitoring staff around the world, including offices in Hawaii (Program Director's office), Costa Rica, Colombia, Mexico, Thailand, Italy, Spain, Mauritius, and the Philippines. EII has no observers or monitors at sea on any boat around the world, but monitors regularly travel to inspect many other countries with important tuna canneries and fleets. As part of the "Dolphin Safe" agreement with companies, Earth Island's international monitors have access to fishing vessels, canneries, ports, storage facilities, and transport vessels to inspect tuna catches. Earth Island Institute also works with fish processors and individual boat owners to establish "Dolphin Safe" fisheries and policies.

Companies listed as "Dolphin Safe" must maintain "Dolphin Safe" policies approved by Earth Island Institute and apply them to all international aspects of their operations and related subsidiaries. Furthermore, companies must not participate in whaling; whale/dolphin/sea turtle meat purchasing, processing, or sales; dolphin "drive" fisheries; or shark finning.

Global tuna trade is valued at around US$5.5 billion (2004). More than 200 processing and fishing companies are approved by EII representing around 90 percent of all tuna canners globally[16], including many in developing countries, and more than 200 importers, distributors, brokers, retailers, and agents are approved, with a stronger focus on developed countries.

The Marine Aquarium Council (MAC) initiative, established in 1998, covers assessment of aquarium animal resource sustainability, including impacts of collection and post-harvest quality of care. The MAC is an international, 'not-for-profit' organization that brings marine aquarium animal

[16] http://www.earthisland.org/dolphinSafeTuna/consumer/

collectors, exporters, importers and retailers together with aquarium keepers, public aquariums, conservation organizations and government agencies. MAC's mission is to conserve coral reefs and other marine ecosystems by creating standards and certification for those engaged in the collection and care of ornamental marine life from reef to aquarium. The MAC Core Standards (see Appendix C) outline the requirements for third-party certification of quality and sustainability in the marine aquarium industry from reef to retail. MAC Certification covers both *practices* (industry operators, facilities and collection areas) and *products* (aquarium organisms). For Certification of Practices industry operators at any link in the chain of custody (collectors, exporters, importers, retailers) can seek to be certified by being evaluated for compliance with the appropriate MAC Standard. For Certification of Products MAC certified marine ornamentals must be harvested from a certified collection area and pass from one certified operation to another, e.g., from collector to exporter to importer to retailer. MAC certified marine organisms bear the 'MAC Certified' label on the tanks and boxes in which they are kept and shipped.

The global annual trade in marine aquarium organisms is estimated at 40-46 million organisms, almost all originating in developing countries, notably from Southeast Asia, the Pacific Islands, South Asian and Indian Ocean islands, Australia, Hawaii, Mexico, Florida, the Caribbean, Brazil, East Africa and the Red Sea. Trade is made up of saltwater fish, corals and invertebrates (e.g., soft corals, shrimp, small clams) that can be kept in an aquarium. Fish make up about 85 percent of the trade by value. The United States imports around half of this trade and 80 percent of coral imports. Other major markets are Europe and Japan.[17] A general description of the supply chain is provided in Appendix D.

The value/number of MAC certified products is not known, nor is the cost of having developed the scheme[18]. Seventeen collection areas have been certified, along with 16 collectors/communities, and 18 exporters, all in developing countries (Fiji, Philippines, Indonesia and Singapore). There are also 16 importers and 8 retailers certified, all in developed countries except for one in Singapore. MAC promotes the scheme as follows:

- MAC representatives assist interested entities in the industry in their certification process by providing a self-explanatory certification kit with a self-assessment questionnaire to check compliance with the MAC HHT Standard and prepare them for a certification assessment by an independent MAC Accredited certifier.
  Certified entities assist MAC to promote its scheme among its suppliers and customers;
- Hobbyist Clubs are supported by the provision of educational tools and presentations (when possible) about MAC programmes and the marine ornamental trade;

[17] http://www.aquariumcouncil.org

[18] MAC, Pers. Comm., 2007

- Aquariums, Museums and Zoos are supported through collaboration with the European Union of Aquarium Curators (EUAC) with a working group focusing its efforts on education and conservation issues;
- Media with regular press coverage in Koralle (Corail- France; Coral –UK; Coralli- Italy), Pets International, and others, and specific articles in other magazines; and
- Governmental organizations are targeted through specific outreach projects.

The **Naturland Association** has a recently developed scheme for certification of sustainable wild fisheries production. Naturland has traditionally promoted organic agriculture, and had until 2006 only been involved with certification of aquaculture operations. However, in November 2006, the Naturland Assembly of Delegates adopted the first Standards for Sustainable Capture Fishery. The standards not only address the responsible management of natural resources and the protection of the entire aquatic ecosystem, but also the social aspects of fishery, e.g. in developing countries. Products will be labelled so as to enable the trader legally responsible for the product to be identified, and the use of the Naturland logo "Wildfisch" will be governed by a licence agreement to be concluded with Naturland's licensing company, Naturland Zeichen GmbH. Additional detail on the Naturland Standards and processes involved are provided in Appendix C. A fishery in Tanzania is being used as a pilot project and is the only fishery currently at an advanced stage of certification. This certification project is involving ANOVA Food Ltd. in the Netherlands, a supplier of fresh and frozen seafood products to Europe and America, and Vicfish Ltd, Bukoba in Tanzania. Vicfish is an export-oriented fish-processing establishment currently processing about 24 tonnes of Nile perch per day and providing direct and indirect employment to around 2,000 people.

Marine Eco-Label (Japan) The Japan Fisheries Association (JFA) launched a Japanese certification system for fishery products, the 'Marine Ecolabel Japan (MEL Japan)' on 6th December 2007. Certification will begin in 2008, with the first applications expected in March or April of 2008. The JFA is the umbrella organization for more than 400 organizations and companies in Japan's fishery industry, and will act as the secretariat for the scheme. Information relating to the details of the scheme are not yet available in English, but communication with JFA suggest that:

- The scheme's criteria will be based closely on the FAO guidelines, and will encompass performance against management systems, the stock or stocks for which certification is being sought, and consideration of any serious impacts of the fishery on the ecosystem;
- The scheme will be a third party certification scheme;
- Current promotional activities include developing promotional materials and making contacts with industry, mass media and the public;
- It is likely that there will be annual re-audits;
- There will be no charge for logo use; and

- Costs for fisheries wishing to engage with the scheme are not yet known, but the scheme managers intend for costs to be kept to a minimum so as not to result in a barrier to participation. The intention is to work with third party certification bodies to ensure a principle of accessibility. With respect to the costs of establishing the scheme itself, the JFA is provisionally serving as secretariat, and, in this sense, establishment of MEL Japan entails the cost of hosting meetings and developing some promotional materials, but has been minimal and supported by the industry.

KRAV is the Swedish certification organization for organic products, providing for labels to be used on certified products. The KRAV standards[19] include all parts of the chain of custody from the fishery to the retailers, and certification involves assessment of the fishery followed by individual vessel certification. Uptake of the scheme by the fisheries sector has been limited to date, perhaps explained by the fact that the organization's marketing and public relations budget is reported to be very limited[20]. Fisheries currently certified:

- Herring in Skagerrak and Kattegat (subareas of the North Seas, in between DK and SE). 6 trawlers, two working in a pair and four of them collaborating;
- North Sea Prawn (Pandalus borealis) in a subarea of Skagerrak, the Koster-Väderö area. Currently one trawler; and
- Cod (Gadus morhua) and pollock (Melanogrammus aeglefinus) in the Norwegian fishery zones. 14 long line boats.

The organization relies heavily on its using its established contacts for other sectors in the organic market to increase awareness. There are however other fisheries 'in the pipeline' in Norway, Sweden and Iceland and the scheme appears to be building some momentum. Increasing interest in the KRAV scheme in northern countries, as opposed to other certification initiatives such as the MSC, is probably explained by the fact that local markets are familiar with the KRAV organic label for other products, and the fact that the scheme's organisers are located in Sweden. Developing the standards was funded under a project that cost around Euro 250,000, but information on ongoing marketing/running costs are not available; it is thought that 1-2 people are involved with running/supporting the fisheries scheme on a part-time basis.

The UK's Seafish Responsible Fishing Scheme provides a means of recognizing responsible fishing practices *for individual vessels* operating in a mixed fishery, controlled under international agreements. It is meant to develop, promote and bring reward for good practice. Seafish report[21]

[19] http://standards.krav.se/ArticlePages/200702/27/20070227075749_public641/20070227075749_public641.dbp.asp

[20] KRAV, Pers. Comm. 2007

[21] Seafish Industry Authority, Pers Comm. 2007

that the value of landings made by vessels that are at some stage of certification is $460 million, representing close to 50 percent of the value of UK landings, with interest from virtually all vessel segments of the industry. There is a commitment and involvement from most retailers and foodservice operators in the UK, but specifically M&S, Tesco, Sainsbury's, Waitrose, and M&J seafood. Activities to increase awareness and support for the scheme with retailers includes engagement through the Seafish 'responsible sourcing services', while for consumers a public relations campaign will begin early in 2008 focusing on dissemination of information through food magazines.

The Icelandic scheme

In March 2009, the Icelandic Ministry of Fisheries and Agriculture and Fisheries Association of Iceland has announced the programme to certify the nation's fisheries as sustainable. This ecolabel scheme will consist of three phases: Phase 1 is the Statement on Responsible Fisheries in Iceland, adopted last year. Phase 2 is the creation of a seafood eco-label for use on products originating from sustainable fisheries. The circular blue logo, which says "Iceland Responsible Fisheries," was on display during the press briefing. Phase 3, which is ongoing, is finding third-party, internationally recognized, accredited certification bodies to assess Iceland's fisheries. Their assessments will be based on the Food and Agriculture Organization's "Guidelines for Eco-Labelling of Fish and Fishery Products from Marine Capture Fisheries. Companies that market eco-labelled Icelandic products are required to attain chain-of-custody certification. Iceland's first fisheries are expected to be certified in 2010.

2.3 Retailer/Foodservice/Wholesale/Processing sector buying policies related to sustainability of fisheries

It is clearly not possible to present information on the buying policies of all retail/food service sector companies and processors/wholesalers. The following text therefore presents some information on some of the larger businesses around the world, for which information is available. Some additional information can be found in 'A Recipe for Disaster' (Greenpeace 2005). Many retailers have been buying policies that are confidential, but which are reported to be based on various decision-making trees to assist buyers with purchasing. It is also known that many retailers have delisted individual species due to lobbying by various environmental organizations[22].

Walmart. Wal-Mart has 6,792 outlets worldwide (with plans to increase this number by around 650 during 2008), with 28 offices sourcing products from 70 countries[23]. Wal-Mart sourced

[22] MSC, Pers. Comm., 2007 report that almost all the large supermarkets in the UK have delisted species due to such lobbying

[23] As of April 2007 as presented in presentation made at OECD workshop on globalisation

approximately $750 million in seafood in 2006, and the company's volume of seafood business is growing at roughly 25 percent a year. In 2006, Wal-Mart also publicly announced a highly ambitious seafood goal to carry 100 percent MSC-certified wild-caught fish in its stores within 2009-2011[24]. As the supply of MSC-certified fish is currently far from adequate to meet Wal-Mart's demand, this public announcement is effectively a commitment to buy from all fisheries that become MSC-certified. 2007 MSC-certified sales are estimated to be $56 million. A result of MSC certification in the seafood network and better visibility of the supply chain through chain of custody, has been the ability of Walmart to eliminate intermediaries. Peter Redmond, vice president for seafood and deli, and captain of the Wal-Mart seafood network is quoted as saying[25]: *One of the problems we had was how much of our fish was coming to us third-, fourth-, or even fifth-hand. Sometimes our supplier turned out to be nothing more than a packer that was going out to a market saying, 'I need 50,000 pounds of salmon no matter where it comes from.' Through the chain of custody, we started to see when fish was being handled four or five times, and we knew it couldn't be good for the fish. And it's certainly not good for traceability. It brought us a lot more awareness about our supplier base, so now things come to us a lot more directly.* Wal-Mart is now starting to consolidate its business with selected groups of direct suppliers, with suppliers motivated to innovate in environmental performance in order to maintain or expand the amount of business they received from Wal-Mart. An example is provided in the Box below.

Box 1: Fishin' Company and Wal-Mart

Manish Kumar, CEO of the Fishin' Company, Wal-Mart's top supplier of frozen fish fillets in the U.S. since 2005, has been working with WWF to draw more fisheries and processors into the MSC certification programme even though this added significantly more complexity, time, and effort to the job without increasing near-term profits. *"I had no idea what the MSC was in January [2006],"* said Kumar. *"Today, I spend half my day, every day, working on something related to the MSC."* Kumar feels that his efforts are helping to secure and expand his business with Wal-Mart in the long-term. *"It's definitely brought us closer. I think there's a lot more trust now in our relationship,"* he said. *"They're willing to let us talk on their behalf, defend their points, and explain to the businesses we work with how important this effort is. And, because we have the muscle of their business behind us, we can go to a plant or a fishery and persuade them to become certified."*

Source: http://www.scmr.com/article/CA6457969.html#2

[24] Wal-Mart have also stated they will also only buy farmed raised shrimp from January 2008 from ACC certified sources

[25] From The Greening of Wal-Mart's Supply Chain by Erica L. Plambeck. Supply Chain Management Review, 7/1/2007. http://www.scmr.com/article/CA6457969.html#2

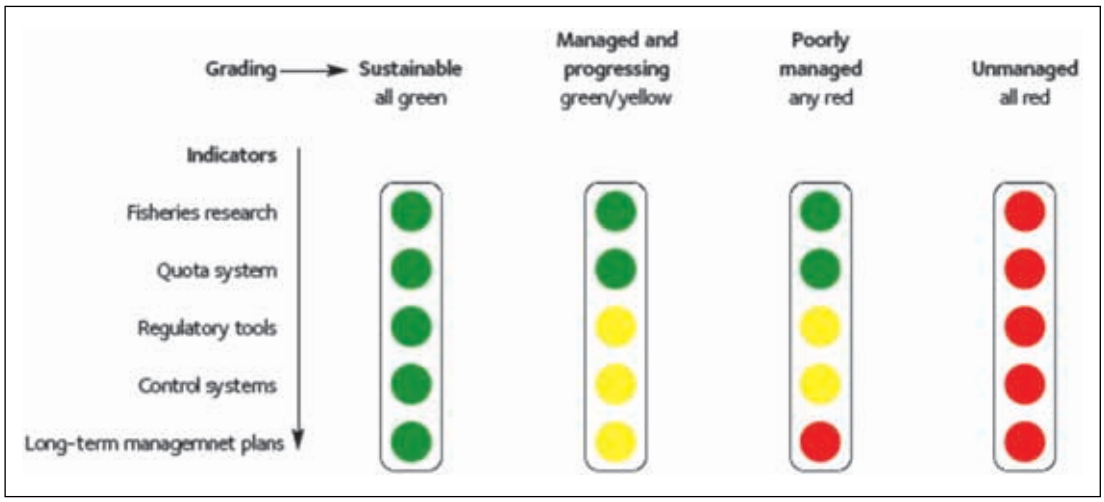
Carrefour. Carrefour, the number one retail chain in France, has developed its own ecolabel asserting that its eco-labelled products originate in sustainable fisheries. The details of the scheme are not public, but it is based on a methodology where the weak points of the marine resource sustainability are identified and corrected (Monfort, 2007). Carrefour launched its label on cod products, in spring 2004. Four species caught in Iceland and one in Greenland have received the chain's ecolabel, but these products represent less than 1 percent of the company's sales of fisheries products (Monfort, 2007). The retail chain is progressively withdrawing from its shelves products carrying its own ecolabel and instead promote MSC certified items. Carrefour Italy also sells FoS-labelled products.

Metro AG, METRO Group is the third largest retailing company worldwide: some 270,000 employees from 150 nations work at around 2,400 outlets in 31 countries in Europe, Africa and Asia. Total group sales in 2006 were Euro 60 billion, with sales from its Cash and Carry business almost Euro 30 billion and sales from Real and Extra hypermarkets/supermarkets an additional Euro 10+ billion. It has bought tuna from suppliers affiliated with the Earth Island Institute (EII) dolphin-safe label for the last 10 years. Since 2002, Metro has also been offering MSC-labelled seafood products. Examples of products bearing MSC's blue product label are the salmon steaks of Metro's private labels "Ocean Queen" and "Metro Quality". The company has environmental targets, but none relating to the percentage of seafood purchases from sustainable sources, with the company website only claiming that "our stores offer organic fruit and vegetables as well as fish and wood products from sustainable fishing and forestry".

Tescos (UK). Tescos is the largest retailer in the UK, with increasing investments in other countries. Current buying policy does not include a public commitment to any percentage of product coming from certified sources, and like a number of retailers, sustainability of product source is assessed based on a confidential decision-making tree.

Unilever. Unilever deals exclusively in products that have been processed to a greater or lesser extent. Four-fifths of the Unilever fish business is focused on the European market. Unilever sells fish under the brand name "Iglo" in Austria, Belgium, France, Germany, Netherlands and Switzerland, "Birds Eye" in Ireland and the UK, "Findus" in Italy, "Frudesa" in Spain and "Knorr" in France and Spain. Whitefish species make up 95 per cent of the fish sold by Unilever in Europe. Outside Europe, Unilever's Indian subsidiary, Hindustan Lever, annually buys and processes about 70,000 tonnes of fish, from 50-60 species, to make fish mince or 'surimi' for fish sticks, fish paste, and other products. In Vietnam, about 2,000 tonnes of fish goes into fish sauce for Unilever each year. The company has made a commitment to source all fish from sustainably managed fisheries. Unilever writes to suppliers asking them to confirm that their fish are legally caught in specified FAO catch areas and that they are not involved in species threatened with extinction. And they use a 'traffic light' assessment tool for suppliers.

Figure 2: Unilever's Fish Sustainability Initiative (FSI)



This is a 'behind the scenes' assessment. Unilever was instrumental in setting up the MSC initiative in 1997 in association with WWF before the MSC organisation went independent in 1999. In 2004, only 4 percent of Unilever's European fish products originated from MSC-certified fish. In 2005, this share rose to 46 percent, mainly due to the use of Alaskan Pollock from the Bering Sea Aleutian Islands fishery, with the share of supply from sustainable sources reaching 56 percent if Unilevers' in-house assessment is taken into consideration.

Royal Ahold (Netherlands) (owners of Stop & Shop Supermarkets, USA). Stop & Shop established the 'Choice Catch' or 'Ecosound' project in 2001 to distinguish itself as a trustworthy provider of seafood in its market. The project, a partnership with the New England Aquarium, uses the results of independent research on wild-harvested species to give preference to suppliers of sustainably harvested species, delisting suppliers with inadequate traceability systems (Roheim and Sutinen, 2006).

Sainsburys (UK). In 2002, Sainsbury's committed to sourcing all its wild fish from sustainable sources by 2010 and works closely with the MSC. Sainsbury's is working with its suppliers to develop a sourcing/buying policy to assess the relative sustainability of different stocks. This could either operate alongside the MSC scheme as a self-labelling scheme, or could just be used internally to inform and direct purchases to ensure that the sustainability of its fish supply is improving independently of the processes of the MSC.

EcoFish (USA). EcoFish, established in 1999, is a leading sustainable seafood company in the US. It provides fresh and frozen seafood to more than 125 upscale restaurants and over 1,200 gourmet and natural food stores. EcoFish recently received financial support from the Sea Change Investment Fund to broaden its product range and improve its marketing capacities. According to the press release announcing the partnership, the US organic protein market is

growing at an annual rate of 120 percent[26]. EcoFish is sourcing its supplies from species and fisheries which are evaluated as sustainable by a Seafood Advisory Board. The evaluation of wild species considers issues like the biological characteristics, the population status, the fisheries management, bycatch and environmental impacts. EcoFish is also collaborating with FishWise[27], a private educational labelling programme to promote sustainable seafood availability in the retail and catering sector.

Marks and Spencer's (UK). According to its sourcing policy, each M&S seafood product must be obtained from reputable producers, operating within relevant regulations and with respect for the environment. Where possible, fisheries will have been certified as sustainable by an independent organization such as the MSC, and be managed in accordance with the FAO Code of Conduct for Responsible Fisheries. All fisheries that supply M&S are audited to ensure that they comply with the policy. Suppliers are required to maintain reference data on each source of raw seafood including scientific advice from the relevant organization for the stocks in question (e.g. ICES for North-East Atlantic stocks), to verify that the fishery is not causing stocks to decline, damaging the environment, or generating significant quantities of discards. All seafood must be traceable back to the vessel which caught it, with evidence that the catch was within quota where applicable. Fish from undeclared (illegal) landings are prohibited. M&S maintains a 'Banned Species List' of seafood species. M&S had already ceased to stock 19 of the initial top 20 species or groups to avoid when the MCS published its list. M&S have committed to source 100 percent of their fish from sustainable sources (MSC certified or equivalent) by 2012.

CapVest, owner since 2006 of Young's Seafood and Findus (regrouped under FoodVest Ltd) is today Europe's largest seafood operator with a Euro 1 billion turnover (2006 data). The group sells products under two very strong consumer brands: Young's, the leading supplier of chilled and frozen seafood to the UK market and Findus (UK). The largest seafood processor in the UK, Young's Bluecrest, supplies chilled and frozen products to supermarkets, restaurants, pubs, fish and chips shops, schools and hospitals. Supplies originate from 33 countries and include more than 60 species. The group has created an internal think tank, its "Sustainable Seafood Group" and in 2006, FoodVest's procurement policy was agreed based around a set of ten major rules, including the commitment never to buy illegal fish and to carry out objective assessments of the environmental efficiency of all fish purchases. For every species and fishery, a full set of criteria are screened and the ecological and commercial risks assessed and ranked as low, average or high. All MSC fisheries are *per se* considered as low risk supplies and the use of fish procured from independently-certified sustainable fisheries and responsible fish farming operations actively supported. In 2007, FoodVest – which is one of the largest buyers of MSC products and a strong promoter of the ecolabel – chose to address the marine resource sustainability issue directly to

[26] http://www.ecofish.com/pdfs/EF_SC_PR_9_14.pdf

[27] http://www.sustainablefishery.org

consumers through an extensive on-pack communication programme upon their responsible fish procurement programme. This will be communicated on all its seafood products in both the French and UK markets, with the help of text and graphics (Monfort, 2007).

In March 2006, **Compass Group USA**, the largest contract food service company in the US, announced to shift purchases away from threatened fish species and to move toward sustainably sourced supplies. The new policy will impact about $2million of fish sales a year. Under the policy, Compass Group will replace Atlantic cod, with Pacific cod, Pollock and other alternatives. The company also plans to decrease its use of shrimp and salmon that are farmed in unsustainable manners. It will eliminate all other 'Avoid' species from the Monterey Bay Aquarium's Seafood Watch list, and increase its use of 'Best Choices.' The policy is expected to be fully implemented within three years. UK-based Compass Group PLC, the parent company, was ranked the 12th largest employer by Fortune magazine in 2005, with worldwide revenues of $21 billion and over 400,000 associates working in more than 90 countries (Monfort, 2007).

Other supermarkets and food service companies involved with MSC. As of April 2007 there were 38 retailers selling MSC-labelled products, 26 in Europe/Switzerland, 8 in the USA, and 1 in each of South Africa and Hong Kong, and 2 in Japan. There were also 14 food service companies involved, all in the EU except for one in the USA. Recent news (December 2007) include the fact that the Dutch retail sector has united to work towards selling only sustainable fish and seafood. From 2011, all wild-caught fish and seafood at every food retail chain in the Netherlands will come from sustainable fisheries that are certified to the Marine Stewardship Council's (MSC) environmental standard. Over 4,500 stores in the Netherlands are committed to this market transformation, including well-known chains such as Albert Heijn, C1000 and Super de Boer.

Supermarkets involved with FoS. The FoS scheme is now being used by: Booths, Carrefour Italy, Carrefour Portugal, Coop Italia, Fresh & Wild, GS, Iper, Keracher Planet Organic, Sainsbury, Tesco, Unes, Scoop, and Wholefoods.

2.4 Public policy initiatives related to certification

To date, governments have not been extensively involved in fisheries certification issues, and developments have been strongly driven by the private sector and civil society. All the labels discussed above are privately-run initiatives. Indeed any legislated government requirement for certification might be challenged under WTO rules as representing a barrier to trade, whereas voluntary certification schemes are generally considered not to be contrary to WTO rules. Given that certification is principally a market-based tool aimed at promoting sustainability, one could argue that it should principally be left to the market.

However, that is not to say that governments are not stakeholders in certification developments, or that they have no role to play in supporting certification. Many certification schemes and national management instruments refer to international codes of conduct, such as the FAO CCRF, to which nation states have signed up. Certification schemes themselves also typically require the assessment process to consider compliance with national laws, and in many cases governments thus define at least the minimum requirements for certification.

Governments can, and do, also play a crucial role in defining and supporting sustainable management practices, and in assisting with capacity development of those wishing to engage in certification schemes. They may also choose, or be able, to assist with the provision of funding for producers who have insufficient resources of their own to engage with certification schemes, and governments may also be best placed to leverage funds from donors to support certification. Governments could also potentially support certification through promoting sustainable procurement of fish for sale in government facilities e.g. canteens.

In addition, government involvement in certification has included the initiation of, and support for, a number of specific mandatory import/export schemes relating to sustainability (see Table 2). These are not schemes with which developing country producers can choose to engage, but rather regulatory requirements of trade. Other public policy initiatives of relevance to certification include the ongoing international developments and negotiations at the World Trade Organization to reduce subsidies, due to their potentially negative effects on sustainability. As reported in UNEP/WWF (2007) governments around the world are increasingly engaged in both international and domestic efforts to eliminate these inappropriate subsidies, and to redirect public investment towards improved fisheries management. In the World Trade Organization, negotiations have made substantial progress towards a legal prohibition on the most harmful classes of these subsidies. In domestic fora, policymakers are increasingly keen to review and reform their own local practices.

Table 2: Mandatory import/export schemes/initiatives relating to sustainability

Scheme	Comment
DS2031 for export to US markets	The scheme is intended to ensure the use of turtle excluder devices in wild shrimp fisheries. Exporters/importers are required to sign a form (DS2031). Exporting nations have to put in place procedures, and the USA has a TED (Turtle Excluder Device) accreditation team that reviews these procedures and inspects fishing gear in exporting countries. Eligible exports include: a. Shrimp harvested in an aquaculture facility in which the shrimp spend at least 30 days in a pond prior to being harvested. b. Shrimp harvested by commercial shrimp trawl vessels using TEDs comparable in effectiveness to those required in the United States.

	c. Shrimp harvested exclusively by means that do not involve the retrieval of fishing nets by mechanical devices, such as winches, pulleys, power blocks or other devices providing mechanical advantage, or by vessels using gear that would not require TEDs. d. Shrimp harvested in any other manner or under any other circumstances that the Department of State may determine, following consultation with the National Marine Fisheries Service, does not pose a threat of the incidental taking of sea turtles.
ICCAT Statistics Certificate	Requires the provision of certain information for fisheries management purposes. The Statistic Certificate for exporting tuna (bluefin, southern bluefin, bigeye) and swordfish is mandatory for those who export tuna to ICCAT countries. The certificate requires member countries to provide statistical information of importance for stock management purposes. No use of logo on products.
CITES	CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. CITES is an international agreement to which States (countries) adhere voluntarily. States that have agreed to be bound by the Convention ('joined' CITES) are known as Parties. Although CITES is legally binding on the Parties – in other words they have to implement the Convention – it does not take the place of national laws. CITES works by subjecting international trade in specimens of selected species to certain controls. All import, export, re-export and introduction from the sea of species covered by the Convention has to be authorized through a licensing system. Each Party to the Convention must designate one or more Management Authorities in charge of administering that licensing system and one or more Scientific Authorities to advise them on the effects of trade on the status of the species. The species covered by CITES are listed in three Appendices, according to the degree of protection. They include some whole groups, such as primates, cetaceans (whales, dolphins and porpoises), sea turtles, parrots, corals, cacti and orchids. But in some cases only a subspecies or geographically separate population of a species (for example the population of just one country) is listed. There are 15 species of fish and 16 species of amphibians in Appendix 1, and 71 species of fish and 98 species of amphibians in Appendix 2. Appendix I includes species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances. Appendix II includes species not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilization incompatible with their survival. See http://www.cites.org/eng/disc/species.shtml for more detailed information.

3. Benefits of certification schemes, and limitations to greater uptake

3.1 Introduction

This section is based on a review of available literature, but it also draws on two surveys conducted as part of this study. These surveys were conducted using an internet-based survey tool, with respondents completing a survey online. Eight small-scale and developing country fishers/producers that are already certified or that are currently undergoing assessment completed the first survey[28]. The second survey was used to canvas the views of those businesses in the supply chain; ten survey responses were obtained from more than 150 email requests, with nine of them being from business to business stakeholders i.e. businesses in the supply chain between producers and retailers.

Table 3: Respondents to web-based questionnaire

Fishers/producers and scheme	Businesses, sector, country
Vietnam Ben Tre clam fishery. MSC	EcoLogix Group Inc., processor, USA
Azores tuna and demersal fishery. FoS	Youngs Seafood, processor, UK
Senegal mixed fishery. FoS	Credenza Sea Products, processor, UK
UK SW mackerel handline. MSC	Irvin and Johnson, processor/retailers/ exporter, South Africa
South African hake fishery. MSC	Beiramar Shipping Services, exporter, South Africa
UK Torridon nephrops creel fishery. MSC	Tampa Bay Fisheries, processor, USA
Australia Lakes and Coorong fishery. MSC	Waitrose, retailer, UK
UK Burry inlet cockle. MSC	Seachill, processor, UK
	Five Star Fish, processor, UK
	Southbank Fresh Fish, wholesaler, UK

Note: All businesses were certified for MSC products

The literature review and surveys have been used to consider a number of issues, which are discussed in the following sub-sections, namely a) what are the perceived and actual benefits to different stakeholders; b) what are the constraints to certification, and why are more fisheries in developing countries not certified; and c) can certification actually bring about improvements in management regimes.

Table 4 summarises developing country fisheries that are certified, or which are currently under assessment, under the various schemes presented in Section 2.1. It is noteworthy that so few of the certified fisheries of the main certification schemes are from developing countries.

[28] Developed country fisheries were included due to the few developing fisheries certified to date, and because of an expectation that some of the lessons to be learned could be related to the small-scale nature of the fisheries rather than the fact that they are located in developed countries

Table 4: Developing country fisheries certified, undergoing assessment, or in pilot projects

Standard	Fishery	Annual production (t)	No. of fishers	Year certified	Client	Unit of Certification		
						Area	Species	Gear
MSC certified	Red Rock Lobster Baja California, Mexico	< 2 000 t	228 vessels (500 fishers)	2004	Baja California Regional Federation of the Fishing co-operative Societies. Mexico	Cedros Island – Punta Abreojos, Baja California Sur, Mexico	Red Rock Lobster (*Panulirus interruptus*)	Traps
MSC certified	South African hake fishery (industrial)	150,000 t	?	2005	South African Deep-Sea Trawling Industry Association		*M. capensis* is more intensively targeted on the south coast, whereas *M. paradoxus* predominates in the West and Southwest in deeper waters	Bottom trawling with different mesh sizes for inshore and deep-water trawls
MSC in full assessment	Ben Tre Clam Hand gathered Fishery, Vietnam	30 000 t	?	Undergoing full assessment	Ben Tre People's Committee / Department of Fisheries	Ben Tre Province, Vietnam	Clam (*Meretric lyrata*)	Hand gathering
MSC pre assessment	Pacific tuna	?	?	Pre-assessment	Forum Fisheries Agency	Pacific (north and south)	Albacore tuna	a troll/jig and pole & line
MSC (GASS/DD pilot project)	Gambian Sole Fishery	300 t		Undergoing trial assessment	Gambian Fisheries Department	Coast and River Gambia	Cynoglossus sp.	Bottom set gillnets
MSC (GASS/DD pilot project)	Samborombon Bay Mullet Fishery, Argentina	250 t	?	Undergoing trial assessment	The Province of Buenos Aires	Samborombon Bay in the Buenos Aires province	Samborombon Bay Mullet (*Mugil platanus*)	Nets or gillnets

Standard	Fishery	Annual production (t)	No. of fishers	Year certified	Client	Unit of Certification		
						Area	Species	Gear
MSC (GASS/DD pilot project)	Banc d'Arguin Mullet Fishery, Mauritania	2,000 t	110 non-motorized boats	Undergoing trial assessment	International Foundation of Banc d'Arguin National Park (FIBA), WWF and the World Conservation Union (IUCN)	Banc d'Arguin National Park	Grey mullet (*Mugil cephalus*)	Beach seine
MSC (GASS/DD pilot project)	Ecuador and Peru Mahi-Mahi Fishery	12,000 (Ecuador) 40,000t (Peru)	E: 500 vessels; P: 1,400 vessels	Undergoing trial assessment			Mahi mahi (*Coryphaena hippurus*)	Handline, longline offshore and inshore (Ecuador) hook-and-line offshore (Peru)
Friend of the Sea	Artisanal Fisheries in Southern Senegal (Handline)	Unknown	300 (with other two fisheries)	2007	FairFish	Saloum, southern Senegal	Atlantic bumper (*Chloroscombrus chrysurus*); Cassava croaker (*Pseudotolithus senegalensis*); West African Goatfish (*Pseudupeneus prayensis*); Pigsnout grunt (*Pomadasys rogerii*); Senegalese rockfish (*Scorpaena laevis*); Zebra tilefish (*Branchiostegus semifasciatus*); Skipjack tuna (*Katsuwonus pelamis*)	Handline

Standard	Fishery	Annual production (t)	No. of fishers	Year certified	Client	Unit of Certification		
						Area	Species	Gear
Friend of the Sea	Artisanal Fisheries in Southern Senegal (multi-gear)	Unknown	300 (with other two fisheries)		FairFish	Saloum, southern Senegal	Common dolphin fish (*Coryphaena hippurus*); John Dory (*Zeus faber*); Atlantic horse mackerel (*Trachurus trachurus*); False scad (*Decapterus ronchus*); West African Spanish mackerel (*Scombero-morus tritor*); Spotted seabass (*Dicentrarchus punctatus*); Blue-spotted seabream (*Pagrus caeruleostic-tus*);	Handline, Encircling gillnet (félé-félé), Beach seine

Standard	Fishery	Annual production (t)	No. of fishers	Year certified	Client	Unit of Certification		
						Area	Species	Gear
Friend of the Sea	Artisanal Fisheries in Southern Senegal (encircling gillnet)	Unknown	300 (with other two fisheries)		FairFish	Saloum, southern Senegal	Mullet (*Mugilidae*); Tilapia (*Tilapia guineensis*)	Encircling gillnet (félé-félé),
Friend of the Sea	Traditional fisheries in the Azores[29]	2,400	800 vessels Approx 2,200 fishermen	2006	Azorean Fishery / Regional Government of the Azores	Azorean EEZ	Black-tail comber (*Serranus atricauda*); conger eel (*Conger conger*;) Forkbeard (Phycis phycis); Large-scaled scorpion fish (*Scorpanea scrofa*); Black-spot seabream (*Pagellus bogaraveo*); Wreckfish (Polyprion americanus.)	Handline and bottom longline
Friend of the Sea	Traditional fisheries in the Azores	600	200 vessels 300 fishermen	2006	Azorean Fishery / Regional Government of the Azores	Azorean EEZ	Rockfish (Pontinus khulii); Blue-mouth rockfish (*Helicolenus dactylopterus*)	Handline and deepwater longline

[29] Note that Azores is not a developing country, but can be classified as a middle-income autonomous region and an Objective 1 region of the EU i.e. with GDP per capita of less than 75 percent of the EU average

Standard	Fishery	Annual production (t)	No. of fishers	Year certified	Client	Unit of Certification		
						Area	Species	Gear
Friend of the Sea	Traditional fisheries in the Azores	5,000	20 vessels Approx 100 fishermen	2006 Yearly Surveillance	Azorean Fishery / Regional Government of the Azores	Azorean EEZ	Albacore tuna (*Thunnus alalunga*); Skipjack tuna (*Katsuwonus pelamis*)	Pole and line
Friend of the Sea	Traditional fisheries in the Azores	500	Mixed of Longline and Pole and Line vessels	2006 Yearly Surveillance	Azorean Fishery / Regional Government of the Azores	Azorean EEZ	Yellowfin tuna (*Thunnus albacares*)	Pole and line & surface longline
Friend of the Sea	Sardines and Mackerel Morocco	160,000	2,000 vessels. Approx. 20.000 fishermen	2007	Coop Italia Scarl / Jealsa	Morocco EEZ	Sardines and Mackerel	Purse Seines
Naturland	Nile Perch from Bukoba Landing Sites	8,500+	2,000	Under assessment	Vicfish Ltd / Anova	Bukoba in Tanzania	Nile perch (Lates niloticus)	
MAC CFM	Fiji	Matacaucau, Namada, Vatukarasa Vitogo, Naviti, Marou villages					Reef fish	Live collection
MAC CFM	Indonesia	Pejarakan Village (two collector groups)						
MAC CFM	Philippines	Batasan Island, Marcilla , Busuanga, Barangay Tara (Palawan); Barangay Hambongan, Tangaran (Bohol); Simunul, Panglima Sugala (Tawi-Tawi); San Francisco (Camotes Island)						

3.2 Benefits of certification

The benefits expected by, and actually accruing to, different interest groups vary and are potentially wide ranging as presented in Table 5 below. The benefits to different stakeholder groups are not likely to be equally apportioned. However, determining who benefits most from certification is problematic because of the difficulties in quantifying and comparing the benefits listed in the table below and because of a lack of good data from any cost benefit analyses (which are generally lacking). This section does however describe and discuss some evidence for the extent of the different types of benefits accruing to different stakeholder groups.

Table 5: Summary of potential benefits to different stakeholders from certification

Expected benefit	Retailers/ food service sector	Consumers	Producers
Price increases	✓		✓
Improved client relationships	✓		✓
Improved management resulting in longer-term sustainability	✓	✓	✓
Better knowledge of provenance/ source	✓	✓	
Continued/improved access to markets			✓
Improved public image	✓		✓
Product differentiation and market segmentation	✓		✓

3.2.1 Demand by consumers and their perceptions of benefits

Any discussion about the benefits of certification to producers and businesses in the supply chain is closely linked to considerations of consumer demand. Studies of reactions to seafood eco-labels have often assessed consumer choices when faced with two samples of the same species, e.g. two samples of salmon with one eco-labelled and the other not (Wessells et al., 1999; Johnston et al., 2001). Results have indicated that consumers prefer eco-labelled products, as long as the price premiums are not large. Jaffrey et al. (2001) investigated consumer preferences for eco-labelling in the UK and Denmark and varied the products over a wide range of fresh and processed products. Again, consumers generally preferred labelled products to unlabelled products. Johnston et al. (2001) analyzed consumer demand for eco-labelled seafood in the US and Norway and found a demand for eco-labelled seafood when consumers were presented with choices between eco-labelled and non-eco-labelled products of the same species, although consumers in Norway were more price sensitive than those in the US. Johnston and Roheim (2006) suggest that while consumers consider overfishing sufficiently important to cause them to contemplate changing the species of fish they buy, they are unwilling to choose a less-favoured species (i.e. to sacrifice taste) based solely on the presence of an eco-label.[30]

[30] Dolphin Safe is shown to confer a very minor price benefit of around 1 percent (MSC, Pers. Comm, 2007)

When consumers are asked about their demand for, and willingness to pay for, products from certified sources, many often state a demand and willingness to pay (see Box 2 and Box 3).

Box 2: Consumer responsiveness to environmental sustainability of seafood

In 2005, Seafood Choices Alliance undertook research of the European seafood marketplace, in partnership with Greenpeace, the Marine Conservation Society, WWF and the North Sea Foundation. In this first-ever poll of European consumers, supermarkets, chefs and restaurateurs on attitudes toward seafood and the ocean, 79 percent said that the environmental impact of seafood is an important factor in their purchasing decisions. 86 percent of consumers would prefer to buy seafood that is labelled as environmentally responsible; 40 percent are willing to pay 5-10 percent more for seafood identified as eco-friendly. And 95 percent of consumers and 85 percent of seafood professionals say they want more information about how to buy sustainable seafood.

Source: http://www.seafoodchoices.com/aboutus/EuropeanResearch2005.php

Box 3: Chinese consumer attitudes

In China the secretariat of the China Certification Committee for Environmental Labelling implemented a survey/campaign in 2004 entitled 'Survey on Chinese Public's Environmental-protected Consumption'. This study was not focused on fisheries products. Statistics showed: when purchasing, 58 percent of customers rate quality as the most important criteria; another 35 percent the environmental characteristics of the item. Factors related to brand recognition, service and price gained much less attention. Among the mentioned 35 percent of customers stating that environmental characteristics were most important, 69 percent of them chose eco-friendly products because they thought such products would have health benefits and 21 percent purely for ecological reasons. The survey results showed that at present the market is confused with genuine and fake eco-labelled products. 58 percent of interviewees could partly distinguish genuine eco-products and 27 percent could not distinguish them at all. When asked, 'What do you think of the present state of the Chinese eco products market?" 46 percent said they were not clear about it and 27 percent said the market was 'very confused'. This survey showed that 59 percent of Chinese consumers were willing to pay 10 percent more for environmentally-friendly goods. An important finding was the increasing number of consumers aware of eco-labelling, up from less than 20 percent in the past to 80 percent in 2004.

Source: http://www.sepacec.com/english/labelling/

However, despite the demand expressed by consumers in some surveys, Box 4 and Box 5 indicate that stated demand by consumers and an actual willingness to pay is not always experienced

in practice[31]. A survey referred to in a Nautilus/IIED report (2003) concluded that "in relation to decisions about food and shopping, consumers were unashamedly selfish. Most decisions are based on self-benefit, e.g. value for money, taste and convenience, rather than being driven by altruistic motivations".[32] There is also a widely recognized gap between what consumers say they do on ethical issues and how they actually act – a Cooperative Bank survey found that of the 80 percent of consumers who claim to shop or invest ethically, only 30 percent 'practice what they preach'.[33] Organic labels are recognized by consumers as highly differentiated brands which they can trust, especially in terms of health and safety (absence of chemicals) and for which consumers are prepared to pay a premium – commonly estimated at around 10 percent. However, this inclination is less based on ethical considerations than self interest in terms of health. Of course, issues of self-interest do not apply to the same extent to environmental certification.

An additional problem with certification is that in many cases, consumers can justifiably be considered to be relatively un-educated about different forms of seafood, issues of sustainability, different labels, and so on. As Jodice found when examining the responsiveness of tourists in South Carolina to industry efforts to differentiate locally caught wild product from imported farmed product, 'coastal tourists have a low level of subjective knowledge about shrimp. Therefore, the ability of coastal tourists to discriminate among shrimp attributes (especially related to origin) may be limited.' (Jodice et al, 2006).

Box 4: The case of Frosta in Germany

In early 2003 Frosta, a German supermarket, launched a marketing initiative promising that for all of their own-brand products they would only use fish certified as sustainable by the MSC. At that time, this effectively meant that the only fish they could use for their whitefish products was hoki from New Zealand. Frosta invested a lot of time and money in developing hoki-based products and adjusting processes to accommodate the new fish. Although hoki is usually sold at a higher price in Germany anyway, the extra cost was passed onto the consumer as a ten per cent rise in the price of the end products. Frosta calculated that consumers would be willing to pay a premium for fish that was not in danger of stock collapse and which came from well managed fisheries. They miscalculated. The products were high quality, but Frosta's market share in Germany crashed by more than fifty per cent and they almost went bust.

Source: Porrit, 2005

[31] MSC report (Pers. Comm, 2007) that in regards to the Birds Eye case, the company used cheap fish that did not have the fat line removed. Had they done this the fish would not have had a 'fishy' taste and may have been more acceptable. Findus in Sweden has been far more successful at introducing hoki as an alternative to cod

[32] IGD (2003) Consumer Attitudes to 'Eat the View', report for the Countryside Agency, Watford, IGD

[33] Key Note (2002) The Green and Ethical Consumer, Key Note Ltd

Box 5: The case of Unilever in the UK

In early 2002, Birds Eye launched two hoki steak products in an attempt to switch from cod (heavily overfished) to MSC certified hoki. One, a pack containing six steaks, directly replaced the equivalent cod steak product, which was discontinued (discontinuing the cod steak six pack meant replacing a product line worth well over $35 million). The other, a pack containing two steaks, was sold alongside the cod equivalent. Then, in July 2002, Birds Eye also started selling packs of ten hoki fish fingers. They conducted a lot of market research in advance to see how shoppers would react, and all the messages came back indicating that, given the right incentives, shoppers would buy the product. But when the products finally appeared on the shelves, that is where they largely stayed. Hoki was marketed as "New Zealand hoki", aligning the exotic-sounding fish with a familiar place, similar in people's minds to Britain, and with a reputation for producing high quality food. The sustainability message was there on the pack too: on the front an "Ocean Friendly" logo, and the MSC logo with a short explanation on the back. Hoki was also described in big red letters as "an excellent alternative to cod". But food producers like Unilever cannot determine the price at which food is eventually sold by retailers, but they can send strong signals. The recommended retail prices of the hoki products being provided by Unilever were significantly lower than those for Unilever's cod equivalents, and the hoki fish fingers were promoted at a recommended price a full third lower than the cod product. But competition between supermarkets in the UK is very strong, and tends to focus on iconic products and brands. Cod fish fingers is one of these. Price competition on cod fish fingers drove the prices on the shelves down so that they appeared to shoppers at the same level as the hoki. By 2004, in some supermarkets, cod fish fingers were actually cheaper than the more sustainable hoki option. As of mid-2005, Birds Eye is not selling any hoki products to retailers in the UK because they found that consumers prefer the taste of cod. The experience shows that, even if sustainability is a concern for shoppers, it is still a lot less important compared to price and quality.

Source: Porrit, 2005

So in summary, while many consumers may state a demand for environmentally certified products and a willingness to pay for it, demand by consumers and an actual willingness to pay is not always experienced in practice. This may be in part because irrespective of what they may say when asked in a survey, when it actually comes to choosing products in a shop consumers are 'selfish' in their buying behaviour and are therefore more prepared to pay price increases for products that may have health benefits for them, than for products which are produced in a sustainable manner. It may also be because many consumers are not well educated about environmental issues or the range of brands/labels being used in the market place, and may be rather conservative in terms of sticking with traditional products rather than switching to new environmentally certified products. However, one should also note that the examples provided above relate to documented evidence of events pre-2005. The rapid rise in certified products over the last two years may have meant that at least in some markets, certified products have become more mainstream with consumers more aware about them and prepared to pay for them.

3.2.2 Demand by, and benefits of certification for, retail/food service sector/wholesale/processing businesses

The dangers of generalising

One should note the dangers of generalising across the wide range and types of businesses in the supply chain between producers and consumers, about either the demand for certification, or the benefits that result. Both the demand and the benefits vary hugely depending on the type of business, the species purchased, location, particular customer requirements, and different business strategies.

Thus, while Macfadyen et al (2003[34]) found that interest in environmental certification for shrimp in the catering sector in the UK is generally more limited than in the retail sector, both because consumers are less concerned and discriminating about the origin of food served in restaurants and because caterers/restaurateurs are typically smaller companies for whom certification issues would represent a higher relative cost, this is not to say that retail demand for certification is universally greater than in the food service sector. Likewise, supermarkets in Europe vary enormously in their support for certification schemes; some are strongly in support of certification developments, while others believe that the majority of customers are more interested in other factors such as value for money, speed at check outs, and the quality of products. Having noted these caveats about making sweeping generalisations, some main trends in demand and benefits can nevertheless be identified.

Trends in demand for certification

Most obvious as an important trend, is the increasing demand for certification that is being publicly expressed by businesses. More and more businesses are making commitments to buy from particular certification schemes, or are making statements about sustainable sourcing. The very rapid rise in the value and volume of certified products being sold around the world is testament to the demand for such products by businesses. Section 2.3 provided information on the specific commitments made by some of the large retailers and processors, and by way of example to illustrate the rise in the value of sales of certified products, Section 2.2 highlighted the growth in sales of MSC-certified products to US$510 million from April 2006 to March 2007, an increase of 116 percent on the previous year.

Motivations based on sustainability and Corporate Social Responsibility, and only to a lesser extent on price increases

For retailers, both the literature and our survey show that increasing demand for certification, and the resulting benefits, are most strongly based around long-term planning horizons and the need to ensure reliable supplies, a desire to avoid bad press related to sourcing from unsustainable supplies or suppliers with questionable employment practices, and by perceptions about consumer

[34] The study examined exports of shrimp from Vietnam to the UK, and BeNeLux countries, and of ornamental fish from Indonesia and the Philippines to the UK and France

demand which in turn provides the potential for them to segment the market. While some retailers may hope for a price premium, the survey results discussed below suggest that many do not see such a premium as essential or indeed necessarily possible, given both a lack of consumer willingness to pay and competition in the market place. It is not a consumer driven willingness to pay more that has driven the growth of certification in recent years, but the more intangible factors related to corporate social responsibility commitments and long-term planning horizons. Whilst these are very difficult to quantify, they nevertheless represent very real benefits to businesses.

The survey conducted for this report asked businesses about the initial motivations for engaging with certification, and while not statistically representative given the limited number of respondents, it nevertheless provided some interesting results. For 86 percent of respondents, better prices were considered 'irrelevant' as a motivation. 'Proving environmental credentials to customers' and 'ensuring sustainable sources of supply' were the two factors most often stated as being the primary motivation for certification, while improved or maintained market share were the most common secondary motivations for certification. The assertion about the relative unimportance of price rises as a benefit of certification is borne about by the fact that when asked about the actual benefits realised from certification, only one business reported better prices. Improved market share and helping to ensure sustainable supplies were reported by 25 percent of respondents, maintained market share by 37.5 percent of respondents, and improving environmental credentials to customers by 50 percent of respondents. The costs of chain of custody certification are therefore absorbed within overall operating costs. For most businesses who responded to the survey conducted for this report, this is not seen as a problem and they plan to continue with MSC chain of custody certification.

Quantifying the costs and benefits

Problems with quantification of the different types of benefits of certification mean that very few businesses conduct formal cost/benefit analysis prior to engaging with certification, or are able to provide data when asked about the net benefits (i.e. total benefits less total costs). Generating any good data on the benefits is also further complicated by the reluctance of many businesses to divulge information that they see as being commercially sensitive. The survey conducted for this report was thus not able to generate any useful information in this regard. It is interesting though that none of the businesses we surveyed reported any serious problems with chain of custody certification; such certification is not seen as onerous or requiring many/any special changes in operating procedures. In addition, the costs of chain of custody certification are generally low (typically $3,000 for the FoS scheme and $1,000-3,000 for processors for the MSC scheme and up to around $10,000 for large retailers), and annual re-assessment costs of the same order or slightly lower. As a result, businesses have no problem paying for chain of custody certification themselves. These factors may go part of the way in explaining why much of the demand for certification is being driven by businesses. Certainly, the costs incurred by businesses are small when compared to those incurred by producers, as presented in Table 7.

Power of retailers

Businesses in the supply chain between producers and consumers, like producers themselves, are very strongly driven by the demands of the retailers they are supplying. This is especially so given the increasing power of the retailers in recent years, and the public commitments to sustainable buying policies by many of them as profiled earlier in this report. Retailers are therefore able to hold supplier forums at which they elaborate their preference/requirement for certified/ sustainable products. This means that businesses within the supply chain which provide products to retailers which have made public commitments about certification, or which employ internal sustainable buying practices, are themselves under ever greater pressure to engage in chain of custody certification and to ensure the sustainability of supplies.

Concerns over certification

But many businesses also have concerns over certification. They worry about multiple labels confusing consumers, about the negative implications in terms of competition with non-certified products being sold alongside certified ones, and about educating consumers about certification when there is still relatively little certified product available to buy. Certainly, a key factor for retailers is that product volumes in a particular commodity have to be large enough to ensure a coherent and consistent market image. In many countries, a problem for businesses has been that not enough species/volumes have been certified, and the certification brands have yet to make the necessary impact in the consumer "share of mind". As noted by Porrit (2005) the first point is probably the most critical, as it opens the way to addressing the second. Supermarkets need a guaranteed, consistent supply of the species that people want to buy. Tescos have been reported for example as saying that the variability in supply makes it difficult for them to support certified fish on their shelves (Porrit, 2005).

3.2.3 Demand by, and benefits for, producers

For producers, a wide range of potential benefits could potentially be fueling demand as suggested in Table 5.

Proving environmental credentials to ensure market access, and price rises

As noted by Roheim and Sutinen (2006) the 'issue of market access is an important one for fisheries….If fisheries industries fear that without sustainable fishing practices they will be unable to sell their products to firms such as Frosta, Unilever, Sainsbury's, Whole Foods and Wal-Mart, then that presents a very real market reward for sustainable fishing, with or without a premium for sustainably-harvested products. Wal-Mart's decision will force its supply fisheries to seek certification and will push many fisheries towards more sustainable practices, in order to remain suppliers to this retail giant'. Discussion with the Norwegian Seafood Export Council confirmed[35] that MSC certification of the Norwegian saithe fishery was primarily motivated by a concern

[35] Pers. Comm, 2007

about market access following certification of the Alaskan Pollock fishery. And in South Africa, MSC certification of the hake fishery was also strongly motivated by a desire to ensure continued preferred supplier status following certification of the New Zealand hoki fishery which is also MSC certified. But other motivations for the hake certification, as Ponte notes (Ponte 2006), included expectations about higher prices, and political support in a continuing debate between relative sustainability of trawled and longline-caught hake.

Expected price benefits may also be a factor in producer demand for engaging with certification. However, as the table below shows, proving environmental credentials to overseas buyers/ customers so as to maintain or improve market share, appears to be a more important motivating factor. This suggests that producers may be realistic about the difficulty of actually achieving sustainable price rises following certification.

Table 6: Producer motivations for certification

	Primary motivation	**Secondary motivation**	**Irrelevant**
a) Better prices	29%	43%	29%
b) Improved market share	43%	14%	43%
c) To prove environmental credentials	71%	29%	0%
d) To improve management i.e. certification as a driver of improved management	43%	43%	14%

Source: Poseidon

So what then is the evidence for price rises and other benefits actually being generated for producers, despite whatever the initial motivations are for engagement with certification schemes? The box below suggests a range of benefits to producers of the MSC certification scheme, as reported to MSC scheme managers, in terms of both price premiums and other benefits.

Box 6: Reported benefits to producers of MSC certification

- SW Handline Mackerel (certified in 2000), 7 products: Reported that better market access in home market and new markets in Switzerland resulted in increased demand, price premiums up to 20 percent, disproportional to market price increase, and a more robust management plan.
- Wild Salmon (2000), 218 products: Used MSC to distinguish their products as verification of good management, and found better market access and increased market share in EU market place, with anecdotal evidence of price premiums.
- Patagonian Toothfish (2005), 2 products: Used MSC to strengthen traceability in the fishery to battle IUU fishing and as a risk management tool against falling prices and reputation problems. An improved reputation allowed for it to regain market access in the USA and the UK (2006).
- Alaska Pollock (2005), 120 products: Used MSC as an answer to market demand, as proof of good management, and to improve reputation; succeeded in increasing their market share in the EU market place, and reported price premiums.
- Pacific Cod (2006), 4 products: 3-5 percent price premium, found new markets in the EU, several products in development.
- New Zealand Hoki (2001), 51 Products: Has been very successful in finding new markets in the EU and US marketplace, increased demand and reported a price premium.
- North Sea Herring (2006), 2 products: strong demand for MSC herring from German and Dutch retailers and processors, products in development, good for reputation of PFA fishery.

Source: MSC Pers. Comm.

The survey conducted for this report also suggests a range of benefits to producers, including all those listed in Table 5. However, response rates to this question were limited due to the fact that some fisheries are only just certified so they have not yet had time to see the benefits, while other respondents stated that separating the benefits of certification from other wider market developments/trends was not possible. This was a finding also established in another recent UNEP report (2005), which noted in its summary that 'The research undertaken for this report has made it clear that there is not enough concrete evidence to determine what the effects of ecolabels are on the environment, trade flows or market access for particular products'. Likewise, the survey results were not sufficiently robust to make any statements about how any price benefits that were achieved have been distributed within the supply chain.

Ponte (2006) argues that the prices paid to exporters in South Africa for MSC-certified fish have not changed as a result of certification. And as the UNEP report (2005) makes clear through references to several studies in non-fisheries products, even if there are price and profit premiums, issues of transparency mean that principal gains to the retail sector in developed country markets

from higher end prices are typically considerably greater than the gains experienced by producers. Unilever for example will not commit to pay a price premium, but it will give preference to suppliers of MSC-certified fish products.[36]

Furthermore, there is uncertainty over whether any initial price premiums are maintained for certified products, as more and more products become certified. Evidence from another sector, the organic banana sector, suggests perhaps not. Although the price of conventional bananas fluctuated by roughly 30 percent between 1997 and 2003 and remained roughly the same in real prices, during this period the price of organic bananas dropped by 73 percent. This price drop was due to the increase in supply outstripping increases in demand. A price premium is still paid for organic bananas, but it appears to be decreasing over time as the scarcity of organic bananas decreases (UNEP, 2005).

Benefits of fisheries certification may follow the same pattern, and if they do, it is therefore more likely in the long run that benefits will be derived from continued market access rather than from significant price premiums. However, while it is perhaps counter-intuitive for sustained price increases to be more likely as certification becomes more mainstream and a basic requirement for market access rather than a niche marketing tool, it is also possible that the recent rapid increases in demand by retailers/businesses for certified products within the context of a limited supply of certified fisheries, may increase competition for certified products to the extent that price premiums for producers are generated and maintained in the longer term.

Negative impacts of certification?

So far, the above text has only considered the benefits of certification. However, there may also be negative impacts of certification. As with businesses, very few if any producers appear to conduct cost/benefit analysis prior to deciding whether to engage with the certification process. In the survey conducted for this report, none of the respondents had completed such an analysis. This is perhaps more surprising than for businesses, because of the very considerable costs that can be involved with certification, and is probably explained by the lack of skills/capacity to undertake such analysis. It may also be explained by the fact that few of the small-scale or developing country fisheries have funded certification on their own, and for those respondents in developing countries in particular, certification costs have been strongly covered by external donor and NGO sources without requiring any such cost/benefit studies. Some examples of costs provided by respondents are provided in the table below. They vary considerably due to both the size and complexity of the fishery being certified, and its location. Both factors affect the costs charged by accredited companies for completing the certification process.

[36] Personal communication: Lutz Asbeck, Managing Director, Frozen Fish International, and leader of Unilever's Fish Sustainability Initiative (FSI) Team as quoted by UNEP

Table 7: Costs of certification

Fishery/scheme	Cost
Vietnam Ben Tre clam fishery. MSC	Pre-assessment, $5,000; Full Assessment budget, $80,000
Azores tuna and demersal fishery. FoS	$37,000 for the demersal fishery. Tuna fishery certification achieved at no cost in association with Dophin safe programme
Senegal mixed fishery. FoS	$4,000. $1,500/year
UK SW mackerel handline. MSC	$20,000 for pre and full assessment
South African hake fishery. MSC	$735,000 including all assessment costs and costs incurred with work required to fulfil the conditions of certification.
UK Torridon nephrops creel fishery. MSC	$26,000 assessment. Annual audit $4,000
Australia Lakes and Coorong fishery. MSC	$11,628 pre-assessment and $111,802 full assessment
UK Burry inlet cockle. MSC	$12,000 assessment. $2 annual audit

Source: Poseidon

The general lack of quantification of benefits and/or the use of cost/benefit analyses, make it impossible to assess net benefits that might be resulting from certification. However, given the high costs involved, and the uncertainty over any price impacts, it may be that certification is in some cases resulting in net losses to producers. Certainly, from the survey there are mixed views as to whether certification provides value for money or not, with neither the South African hake certification or the Vietnam MSC certification being considered as providing good value for money by the producers themselves. In the case of the South African hake certification, the certification client report that most of the product is marketed in a wholesale market in Spain, and that the fact that many buyers were not themselves chain of custody certified, initially prevented the benefits of certification from being realised.

3.3 Constraints to certification in developing countries

There is considerable discussion in fisheries circles (e.g. in Gardiner and Viswanathan, 2004, Kurien 2004) about the constraints to certification in developing countries, and the reasons as to why more fisheries in developing countries are not certified. However, much of this discussion is speculative. The following text therefore discusses some of the constraints often quoted as potentially limiting certification in developing countries, and provides some thoughts and some evidence based on the surveys conducted as part of this study.

3.3.1 A mismatch between certification requirements and the reality of tropical small-scale fisheries?

The process of certification is sometimes thought to be more relevant to developed northern countries with single species fisheries, than to mixed-species tropical developing country fisheries. This is thought to occur because standards are typically formulated in developed countries, and to result in problems such as defining the unit of certification and applying the certification standards. Concerns often quoted relate to both the limited data available in many developing country contexts necessary for certification, and the fact that management issues are often more complex in developing country contexts from a biological point of view given the mixed nature of the species and multiple gear types often used. However, mixed species fisheries have been certified (see Table 4), and management of fisheries in developing countries is not necessarily more complex than in developed countries.

The survey conducted for this report found that data requirements of certification were indeed a major factor in constraints to certification, but that other factors often stated as important, were not (see Table 8). The ongoing work by the MSC to develop specific guidelines for certification in data poor and small-scale fisheries (Guidance in Assessing Small Scale, Data Deficient Fisheries (GASS/DD) project) should help in this regard, and in itself implies that data deficiencies have been a major reason for the failure of greater uptake of certification in developing countries. An example of typical data weaknesses were noted in a Workshop on Fisheries Certification and Eco-labelling held by the MSC and the Gambia Artisanal Fisheries Development Age, in April 2006. The workshop report for this meeting notes that *"It was generally agreed that there is limited data currently available on stock biomass for both riverine fish species, and for marine demersal species. More is known about pelagic species from the annual FAO Nansen surveys conducted in the region, while marine demersal assessments have been made only periodically in 1986, 1992 and 1995, and were only partial in coverage. Catch data is not available for river fisheries, but is better for marine species with series data available since 1981".* (MSC, 2006)

Data deficiency may therefore pose two problems with regards to certification. Firstly, it may mean that if important data is not available on which to base sustainable management, this in turn may mean that complying with certification criteria is difficult/impossible. Or secondly, data may not be available to be used to justify the fact that fisheries are in fact being exploited sustainably. Experience around the world in developing countries is that the former problem may be at least as important as the latter in preventing certification. This implies that the work of the MSC GASS/DD project to develop guidelines for certification in data poor fisheries, while certainly important, may not necessarily solve the problem that many fisheries are simply not certifiable due to a lack of good data being available on which to base sound fisheries management.

Table 8: Constraints to certification

Constraint	Suggested by…
Defining the unit of certification	None of respondents
Applying the certifications standards to the fishery	None of respondents
Availability of formal and robust data	**Five of the eight respondents, including respondents in Vietnam, Azores, South Africa, and Senegal**
Ensuring traditional management was accounted for	None, except Australia Lakes and Coorong fishery.

Source: Poseidon

3.3.2 Potential distortions to existing practices and livelihoods?

Other concerns about certification and its impacts in developing countries centre around potential distortions to livelihoods. One such concern is for increased prices and demand for certified products to result in higher levels of exports and therefore reduced availability of fish for local consumption (Gardiner and Viswanathan, 2004, Kurien, 2000). However, whether increased exports of certified products actually have an impact on the food security of the poor in developing countries depends on the primary species being consumed in developing countries by the food insecure, and the species considered for certification and whom it is currently being consumed by (i.e. the poor or the urban middle-class). One should also note that increased exports potentially allow for indirect food security to be increased, with export earnings used to purchase other food sources. It is also claimed that a shift in emphasis towards export markets could potentially have significant impacts on who benefits from trade (Kurien, 2000). Generally, women comprise a significant proportion of post-harvest employment in the fisheries sector, especially where processing and marketing is small-scale and local in nature. Increased sales to export markets could have significant gender impacts, with larger-scale buyers (probably men) being able to out-compete small-scale female buyers at landing sites, if higher prices are being paid for certified products. And if certification does have the predicted price effects in developed country markets it could reward middlemen and the post-harvest supply chain, but not necessarily the fisher (Kurien, 2000). While this may happen, if the market is competitive enough, and demand for certificated prices high, market chains should/could also work more effectively, thereby breaking down barriers for the poor, especially woman who are often more able and suited than men to adapting to newer processes. In addition, it should be recognized that other factors e.g. urbanization, macro-economic conditions, etc are probably far more important than the impacts of any eco-labelling on the distributional benefits of trade. As noted above, the results of the survey conducted for this report were unfortunately not robust enough to make any firm comments about price impacts or distribution within the supply chain, but none of the respondents stated any distributional impacts as having resulted from certification, and none any adverse gender impacts.

It is also claimed in some literature (Gardiner and Viswanathan, 2004) that price differentials for certified products may actually increase pressure on particular stocks and diminish sustainability. For schemes which do not address this issue in their standards, this may indeed be true. The MSC requires evidence that the management scheme can handle increased demand, and a fishery's management must demonstrate a robust adaptive strategy that ensures that changes in the external environment do not impact on the long-term sustainability of the stock. However, two of the respondents in the survey of producers stated concerns over certification actually resulting in increased pressure on the fishery. One stated that *'The fishery has acted as a honeypot to other non-complying vessels that fish it legally, while not following the strict management code set up', while another commented that 'Higher prices have created demand and have led to illegal poaching.'* Both fisheries were MSC-certified fisheries, despite the requirements of the MSC certification process to ensure that events do not occur following certification. The potential of certification to bring about management improvements is further considered in Section 3.4.

3.3.3 Equity and feasibility?

It is often argued that it may be harder for fisheries in developing countries to secure certification. One reason given is that small-scale fisheries are less likely to find that any benefits from certification outweigh the costs, especially where the unit of certification may be small and involve few fishermen/vessels with a low value of catches. In addition, certification costs must be paid in advance, while benefits may not accrue until after the product is caught and marketed. Small-scale producers in developing countries are less likely to be able to 'front-up' the money required for certification due to difficulties in accessing credit, and lower overall earnings/profits. Raising funds from government, and from stakeholders in developing countries, is likely therefore to be harder than in developed countries. This argument appears to be borne out from the fact that a) so few fisheries in developing countries are certified, and b) those that have been certified under the MSC scheme (which has relatively high costs compared to other schemes) have relied heavily on donor and external support to cover certification fees. The South African hake MSC certification was paid for by the South African industry itself, but this fishery is exploited by industrial fishing companies, and is not small-scale in nature. As already noted in Table 7, costs of certification are considerable, and may indeed be higher for developing countries by virtue of the fact that accredited certification companies are based in developed countries, thereby increasing the travel and fee costs required by such companies to complete assessments.

Secondly, the potential for certification may not be equitable or feasible due to capacity issues. These relate both to the existence and capacity/ability of fisher/producer organisations needed as the certification client, and the capacity/ability of fisheries administrations to manage fisheries well and to affect management improvements required during certification processes.

The existence of a capable, well organized certification client is essential, but often not present in many developing country fisheries. The capacity needs of such organizations are diverse,

including organization and consensus-building skills, good communication, and an ability to deal with complex policy, regulatory and enforcement issues. Furthermore, the certification client needs to be a robust, stable organization that can ensure that lessons learned during the initial assessment and on-going maintenance of the ecolabel, are retained and translated into improved management. Capacity-building has been built into some eco-labelling initiatives. For instance, the capacity of beach management units (BMUs) for the proposed eco-labelling of Nile perch from Bukoba on Lake Victoria in Tanzania, was recognized to be a constraint[37], and training in financial management, data collection and fish handling practices have been provided. However, the survey found that, apart from this example, virtually no training has been provided to fishers or managers for/during certification processes. This raises questions about the need for earlier training in a) improving management, and b) the certification processes themselves.

Experiences from around the world also suggest clear limitations to managing fisheries in developing countries due to insufficient funds, poor governance, and weak institutional capacity of fisheries administrations. All these factors affect the performance of fisheries management, thereby reducing the likelihood of fisheries management practices complying with certification criteria and standards, and therefore of developing country fisheries seeking to engage with certification. Of course one could argue that this very fact lends weight to the need to support certification in developing countries if such certification can itself bring about improved management.

But capacity issues affecting the ability of producers to realise potential benefits of certification may also be limited by the capacity to engage with exports more generally, and with an ability to meet buyer requirements (see Table 9), not just with the ability to comply with certification requirements. Our survey of businesses for example highlighted that buyers are much more concerned with other factors, than with increasing sources of certified products. When asked about the range of problems in sourcing fish products shown in the table below (Table 9) compared with the importance of certification, only one business respondent stated that increasing sources of certified products was more important than solving the range of problems presented in the table. This suggests that developing country producers need to pay at least as much attention to the issues listed in Table 9, if not more, than to issues of certification if they are to access export markets, and enjoy the potential benefits of certification. Other practical and logistical issues, such as knowledge of, and compliance with, importing country regulations on hygiene, labelling, etc may also prove a significant impediment to trade.

[37] Naturland, Pers. Comm. 2007

Table 9: Buyer perceptions about the problems in sourcing fisheries products from developing countries

	Very	Quite	Not very	Not at all
Quality of products	34%	33%	33%	0%
Frequency of transport	17%	17%	50%	17%
Prices demanded	17%	0%	83%	0%
Batch volumes available	33%	17%	33%	17%
Reliability of supply	50%	17%	33%	0%
Communication issues	17%	0%	50%	33%

Source: Poseidon

Our survey, and discussions with scheme managers themselves, also suggests an additional issue of equity that may be hampering certification in developing countries. Scheme managers have naturally focused on those markets where there is apparent demand for certification, and on fisheries that are close to where scheme managers are located. So for example, the MSC has until recently only had offices in Europe and the USA. It is not surprising therefore that they have focused their efforts and awareness-building with retailers, businesses, and producers in developed countries. For a very long time, the MSC only had one member of staff dealing specifically with developing countries. The recent establishment of the MSC office in Australia to deal with outreach in the Asia/Pacific region, and the developing country fishery programme activities described earlier in this report, may help to resolve some of these issues.

The following table (Table 10) presents the views of businesses we surveyed as to the relative importance of the issues discussed above in constraining certification in developing countries. It is clear that the two main issues are perceived to be i) poor fisheries management practices and capacity to improve them, and ii) the costs of certification allied to the availability of funds in developing countries.

Table 10: Business/supplier perceptions about why more fisheries in developing countries are not certified.

	Very important	Of some importance	Not important
Poor fisheries management in many fisheries	**75%**	25%	0%
A lack of attention to date by certification scheme managers on outreach in such fisheries	17%	**83%**	0%
A lack of funds for fisheries to engage with certification	**75%**	13%	13%
A lack of capacity or political will to make management improvements in fisheries that may be necessary	**63%**	38%	0%
Certification may provide few benefits to fishers themselves	38%	38%	25%

Source: Poseidon

Certainly, the lack of certification in developing countries is not due to a lack of developing country exports to markets in which certified products are wanted. The introduction to this report noted the rapid increase in developing countries exports in recent years, and there is strong demand for certified products from developing countries by developed country buyers. In our survey 67 percent of respondents thought that over time the proportion of their purchases from developing countries is likely to rise, 17 percent thought it would stay the same, and 17 percent did not know. None of the respondents thought that the proportion of their total purchases coming from developing countries would decrease in the future, while all of them stated that in principal they would like to see more fisheries in developing countries certified.

3.4 Can certification bring about improved management?

As indicated in Table 5, a major *anticipated* benefit for some retailers/processors and producers is the long-term sustainability of supplies. Likewise, the motivation of many certification schemes themselves, and interest in them by civil society, is the potential to bring about management improvements and long-term sustainable exploitation of fish resources. This raises the interesting question as to the extent to which environmental certification are actually *bringing about* better management, and the extent to which certification schemes are just certifying fisheries that are already well managed.

In some **MSC** cases, the pre-assessment and assessment process can, and in some cases have, identified management changes that need to be realized for full certification to be achieved (see Box 6 and Table 11 below, which reports the responses from our survey). This may be strongly related to the fact that the MSC principles and criteria for certification are fully compliant with the FAO

Guidelines on Eco-labelling. In addition, one unusual case where assessment has made a difference is in the North Eastern Sea Fisheries Committee (NESFC) assessment of the lobster fishery on the NE coast of England to the MSC standard. The fishery failed the assessment (the first to do so) but has developed a comprehensive management plan to respond to the identified weaknesses and once this has been successfully implemented, will re-enter the assessment process. MSC has also investigated the wider environmental gains resulting from the MSC assessment process (Agnew et al, 2006). Of ten fisheries examined, 89 'gains' and 8 'no gains' were identified. Most of the positive gains were institutional in nature, with research also receiving a significant improvement. In addition, a number of operational gains e.g. real improvements in controlling the impact of fisheries on the environment, were supported by quantitative evidence. Most of the positive gains related to Principle 2[38], and as might be suspected, most of the environmental gains were linked to conditions attached to certificates. It should be noted that this was an MSC publication, but it was nevertheless prepared under contract by a fisheries consultant, and appears objective. There appears little, if any, other well-documented evidence of management improvements, over and above those stated in Agnew, those provided by the MSC in Box 6, and those presented in Table 11 below.

The **Friend of the Sea** principles are a more or less direct quote from the general principles stated in the FAO Guidelines and the criteria for assessment are broadly in line with the FAO Guidelines. In the long term, fishers could potentially choose to switch from an unapproved gear (e.g. trawl) to an approved one (e.g. longlining), or could make efforts to reduce levels of bycatch, for example. However, in the short term, the fact that the Friend of the Sea scheme is a 'yes/no' desk top analysis based on existing practices and published information, rather than certification based on direct face to face interaction and discussion between certifiers and fishers/managers, would seem to limit the potential for management improvements to be made *as part of the certification process itself*. Certainly, our survey suggested that no management changes were made as a result of the certification.

[38] The MSC's Principles and Criteria for Sustainable Fishing (known as the MSC standard) are based upon three fundamental elements that contribute to sustainable fisheries: maintaining healthy target fish populations (Principle 1); understanding and maintaining the integrity of marine ecosystems (Principle 2); and implementing effective fisheries management systems (Principle 3)

Table 11: Management impacts of certification

Fishery/scheme	Management changes required/made
Vietnam Ben Tre clam fishery. MSC	No full assessment yet, however following Pre-Assessment there was the establishment of a wider, unified and representative Cooperative system, following recognition that the previous systems (several co-operatives, some effective some not) was not ideal. No costs were involved with these changes
Azores tuna and demersal fishery. FoS	No
Senegal mixed fishery. FoS	No
UK SW mackerel handline. MSC	No
South African hake fishery. MSC	Numerous small changes made during the certification process but nothing significant, with some conditions also specified with regards to maintenance of the certification. The fishery was essentially already well managed before the certification process began.
UK Torridon nephrops creel fishery. MSC	A voluntary Code of Practice was introduced which has the following requirements over and above basic legal requirements: max 200 days fishing, limit to 800 creels fished per day, limit to 2 sets of 800 creels, return all berried (ovigerous) females, return under-sized individuals (min landing size is approximately 38mm carapace length whereas legal limit is 22m), use of escape gap ($1.70/escape gap) to reduce the number of under-sized individuals brought to the surface. The fishermen have seen improvements in catches (especially early in the first 5 year period) and reductions in gear losses due to trawling. However, this was due specifically to the creation of the static gear-only area rather than the certification. The fishermen remain frustrated that certification, which lends weight to their argument that the area is now well managed, has not helped them in getting the government to change the regulatory regime to support good management.
Australia Lakes and Coorong fishery. MSC	Very few and small changes were made to the management regime. The fishery was already heading down these regulatory requirements. Certification just hurried the process along
UK Bury inlet cockle. MSC	Small only. Justification of actions and some improved communication, with no associated costs

Source: Poseidon

Dolphin-friendly labels are controversial for several reasons related to their impacts on sustainable fishing practices. One is that the labels have encouraged fishing on Fish Aggregating Devices (FADs) which can lead to a much higher by-catch not just of dolphins, but of a range of other endangered and vulnerable species. A second reason is that the labels do not take into account any assessment of the size of tuna populations, and whether they can withstand the very significant fishing pressure that many of them are currently under. As such they say nothing about the sustainability of tuna fisheries themselves. In sum, the labels are not thought to be compliant with the basic requirements of the FAO Guidelines with respect to ecosystem impacts, nor with the procedural and institutional aspects of the FAO Guidelines.

The **Naturland** and **MAC** standards and criteria also appear compliant with the FAO Guidelines, and the **Mel-Japan** scheme is also expected to be coherent with the FAO Guidelines. Given the early stage of the Naturland and Mel-Japan schemes, understandably no real management improvements have yet been realised.

The **Krav** scheme, along with the **UK Seafish Responsible Fisheries Scheme**, place a strong focus on the certification of vessels, with perhaps less emphasis, and therefore ability to impact, overall fisheries management regimes. But both can be considered broadly compliant with the FAO Guidelines.

However, the ability of any of these schemes to affect *significant* management and sustainability improvements remains largely untested, because they have so far targeted their efforts on fisheries most likely to be certified and/or where management changes required are only small. This is quite understandable given the need/desire for schemes to build up sales volumes of certified products as quickly as possible, and because it is the well managed fisheries that have most wanted to engage with certification.

That said, as certification gains further momentum based on increasing retailer demand, it is quite possible that fisheries that are not so well managed will seek to engage with certification, and that certification may therefore increasingly influence fisheries management practices. The power of the retailers to drive their wishes through their supply chain has already been discussed. Friends of the Sea claim[39] to have evidence of 1) un-approved fisheries/suppliers being dropped by the retail chains they work with (e.g. Morocco octopus, Bangladesh shrimp, Spanish sardines), and 2) certified products being preferred when compared with un-certified ones. As already noted, MSC[40] also reports that almost all retailers in the UK have de-listed certain products not considered to come from sustainable sources or from fishing gear deemed to be unsustainable. And many retailers have now made public commitments to sustainable sourcing. Fisheries managers may themselves also use certification criteria and standards as benchmarks for good management practices prior to any engagement with accredited certifiers or during pre-assessments.

But the question remains whether retailer statements and intentions are enough to bring about changes in fisheries where management practices are currently weak? And is certification being used as a marketing tool by retailers to pre-empt growing consumer concerns on fisheries sustainability, without really addressing the underlying problems of overfishing?

It is clearly difficult, if not impossible, to fully understand the true motivations of different retailers in support of certification. It is likely that a spectrum of motivations are in evidence, with some retailers/buyers really trying to make an impact on the sustainability of their supplies for the long-

[39] Pers. Comm., 2007, Friend of the Sea

[40] Pers. Comm., 2007

term, with others making statements in support of certification without really being convinced of its benefits. Irrespective of the motivations in evidence, if producers/retailers continue to display support for certification based on the range of potential and actual benefits discussed in Section 3.2, given their power over the supply chain, certification as a market-based incentive may be sufficient to bring about management changes.

However, this potential to bring about change must be seen in the context of the significant challenges facing improved fisheries management in many countries, as discussed in Section 3.3. Factors constraining the ability of certification to impact on management and sustainability include insufficient financial resources and capacity to manage fisheries effectively, IUU fishing (with vessels by virtue of their activities being unlikely to engage in any debate about certification and the need for management/sustainability improvements), a lack of basic data and information on which to manage fisheries, weak monitoring control and surveillance, and in some cases the use of subsidies which may be encouraging over-exploitation.

The ability of different schemes to bring about sustainability improvements is therefore likely to be dependent not just on their respective coherence with the FAO Guidelines or the proposed EU Guidelines, but also on the differing market demand for the various schemes, and on factors that may simply be outside the realm of certification schemes themselves to directly influence.

So in conclusion, the answer to the question as to whether certification can bring about improved management is perhaps a tentative 'yes'. In some cases, the constraints to improved management may be too great for certification to influence, and attempting to pursue certification in such cases for particular stocks may simply be unrealistic, at least in the short term. However, as demand for certified products by retailers grows over time, the potential for certification to directly bring about improved management, rather than just 'rubber-stamping' fisheries that are already well managed, is likely to increase.

3.5 Future prospects for certification

What then are the future prospects for certification? While acknowledging that attempting to answer such a question is largely 'crystal-ball gazing', from recent trends and the experience of eco-labelling to date, a number of tentative answers can be provided as follows:

1. Certification and eco-labelling is certainly here to stay, and recent interest and growth suggest that certification is moving from a niche-market phenomenon to one that is more mainstream in nature.
2. However, demand for certified products is not uniform between countries, market segments (e.g. retail vs food service sector), individual businesses, or species. These differences in

demand are significant and are likely to remain in the future, even if reduced to some extent as overall demand for certification grows.

3. It is possible, but not yet clear, that there may be some consolidation in the market for eco-labels, given a) retailer desire not to confuse consumers with a plethora of different labels, and b) the relative costs and benefits of the different schemes. Different certification schemes are private sector run initiatives (even if designed to generate public benefits) competing with each other. The growing interest in certification could mean that there is even more room in the market for more labels, if the existing schemes are unable to keep up with the growing demand for certified products. However, it is also possible that in the medium- to long-term, a relatively small number of labels may come to dominate the market based on their respective costs and benefits. Certainly, at the present time, the MSC label is seen as something of the 'gold standard' of eco-labels. However, the significantly lower costs of the FoS scheme, mean that the respective increases in sales volumes/values of certified products from these two schemes will make for interesting viewing in the coming years.
4. What can be said about future growth in consumer demand and willingness to pay a price premium? This is a difficult question to answer, but as noted earlier it appears that the growth in certification is being driven more by the retailers than by consumers and any willingness on their part to pay for eco-labelled products. This suggests that either certification costs will become part of the costs of doing business, or that retailers will have to engage in more consumer awareness campaigns/marketing (perhaps even explicitly addressing the need to pay higher prices) if price benefits are to be realised throughout the supply chain.
5. FAO is currently involved in a process to develop certification guidelines specific to small-scale developing countries, and the ongoing work of the MSC on certification in data poor and developing countries has already been discussed. Initiatives such as these should help in the longer term to increase the number of small-scale developing country fisheries that are certified. But for certification to really gain ground in developing countries, it is likely that a wide range of actions may need to be taken. Some suggestions are provided in the following Section.

4. Suggested ways of increasing certification in developing countries

How then can certification in developing countries be supported so as to improve management and sustainable fishing practices, and so as to ensure that developing country producers obtain benefits from certification, and are thereby encouraged to pursue it? This section discusses a range of possible ways to increase certification in developing countries based on some conclusions that can be drawn from the survey conducted for this study and the analysis and text provided earlier in this report. The suggestions cover a range of activities that may be necessary by different stakeholders. Thus, appropriate actions relate to those that may be necessary for producers, retailers and their supply chain, certification scheme managers, developing country governments and fisheries managers, and bilateral and multinational organisations. Many of the actions proposed will be most successfully achieved if pursued by partnerships of different stakeholders.

Businesses paying higher prices for certified products. If retailers and supply chain businesses desire increased quantities of certified products, even if consumers are not prepared to pay more for certified products, businesses may have to consider paying more to their suppliers. While this is contrary to the tendency of big businesses with market power to squeeze margins from their suppliers and drive down their purchasing costs, it may be a price they have to pay for increased volumes of certified products. There is obviously no way of enforcing this to happen, but given increasing public commitments to sustainable sourcing, it is quite possible that retailers in developed countries may increasingly pay higher prices for certified products, as demand for certification outstrips the quantities of certified products available. Being prepared to pay more for certified products would help to ensure that producer demand for such schemes is increased, based on real financial benefits accruing to producers.

Maintain increasing support by retailers for certification. Given the power of retailers over the supply chain and increasing global trade, their support for an ever increasing share of total sales that are certified/labelled, will play a significant role in increasing the incentives of producers in developing countries to engage with eco-labels. This support should ideally be coupled with attempts to simplify and consolidate labelling so as not to confuse consumers, and so as to generate strong consumer awareness about eco-labels.

Consumer campaigns to increase the willingness of consumers to pay. Discussion was presented earlier in this report about the lack of willingness by many consumers to pay for certified products, even if they say they will do so in surveys. However, consumer awareness campaigns may be able to influence consumer behaviour so that increased prices become more acceptable. It may be that such campaigns have to explicitly and directly deal with the fact that if consumers want to consume sustainable seafood, they should have to pay for it. Again, this would enable higher prices to be paid to producers for certified products, thereby increasing demand by producers for certification schemes.

Campaigns to build consumer and retailer demand for certification in developing countries. Efforts to increase demand for certification and eco-labelled products in developing countries may be especially effective at encouraging fishers/producers in developing countries to engage with certification. This assertion is made because a) supply chains may be shorter than those for export sales, thereby increasing the potential for any price premiums to be passed through the supply chain to producers, b) many developing countries now have rapidly expanding middle classes with an ability/desire to pay premium prices, b) local/regional sales may avoid many of the logistical problems faced by exporters when exporting to developed country markets. Outreach work by scheme managers and other interested parties could therefore usefully focus more strongly on developing country markets.

Reduce certification costs. If it is indeed true, as we argued earlier, that the MSC scheme has particular potential to influence fisheries management and sustainable fishing, then given the large disparity in the costs of certification between the MSC and some other schemes, urgent attention is required as to ways of reducing the costs charged by MSC-accredited certifiers. Some possible ways of doing so could include:

- Certifiers using more developing country fisheries experts in the certification process. Such experts would be expected to charge lower fees, and to incur lower travel costs if based in the developing countries in which fisheries applying for certification are located;
- Certifiers using the same consultants as often as possible, thereby increasing the familiarity of the certifiers with the scheme concerned, and thereby reducing the time required;
- Certifiers reducing the number of staff deployed on assessment missions; and
- Certification scheme managers considering ways of reducing the time requirements of assessment, and simplification of their assessment criteria, to the extent that this is possible without compromising the standards of their schemes.

Explicit recognition of the data-deficient nature of many developing country fisheries. We have earlier highlighted the fact that the lack of data in many developing countries provides a very real constraint to certification. Efforts such as the MSC's GASS/DD project to address the question of how fisheries can be certified when data is lacking (and when fisheries are being exploited sustainably) should be conducted by other scheme managers as well. Unfortunately, the results of the MSC project are not yet known as it has only just begun, and preliminary results are not yet therefore available. But the outcomes of this project are expected to be of particular importance in increasing the ability of developing country fisheries to engage with certification.

Capacity development for improved fisheries management. Irrespective of data deficiencies in developing countries, many fisheries are simply not managed well enough to comply with certification standards and criteria. It is unlikely that certification scheme managers will be inclined to allow less stringent standards for certification in developing country fisheries or data deficient

fisheries; indeed they would be unwise to do so, as it would severely compromise the 'brand' value of their certification logos.

This implies that general efforts to improve management where it is weak must be addressed as a matter of urgency. This is primarily the responsibility of developing country fisheries administrations as servants of their industry, and requires capacity development and the provision of appropriate staff and budgets specifically for fisheries management. But improved capacity and management can also be supported by donor-funded fisheries management and capacity development projects. While one would ideally wish to see improved management of all fisheries, those interested in certification may wish to focus specifically on assisting the management of those fisheries producing products that have a high demand in markets receptive to certification i.e. export fisheries producing sufficient and reliable quantities of product being sold into retailers/ markets with expressed demand for certified products.

Improved management can also be supported by retailers working with the supply chain. Increasingly, it is expected that if retailers are to obtain more certified products, they are going to need to engage more fully with the whole supply chain. This is likely to mean not just educating their immediate suppliers, but also working directly with producers and fisheries administrations to lobby for improved management based on the expected benefits to producers.

Provision of funding for certification. Developing country producers and fisheries administrations should seek non-governmental and governmental assistance in support of certification costs. Given the comments made earlier in this report about the relatively small costs for chain of custody certification as compared to the high costs of fishery certification, developed country retailers seeking increased quantities of certified products may also find it appropriate and necessary to support certification in fisheries from which they hope to obtain certified products. Developing country producers should explore all possible avenues of funding assistance.

Joint fisheries certification. Where different producer groups are targeting a common fish stock and working under common management systems, potential for joint certification could be considered. This would serve to reduce the certification costs for the fishers concerned.

Improved evidence for the benefits of certification, and improved decision-making. At the present time, hard evidence of the benefits of certification to producers is hard to come by. This is in part due to the commercially sensitive nature of such information. However, it is also due to a lack of capacity in many developing countries to quantitatively assess the benefits of certification through the use of cost/benefit analyses. Completing such analyses following certification could help to demonstrate the benefits of certification, thereby increasing demand for certification by other producers. The lack of capacity by producers to adequately assess net benefits prior to engaging with certification, may also be hindering their decisions about whether to proceed,

due to uncertainty and concerns over costs relative to benefits. Capacity building in cost/benefit analysis and decision-making, could therefore be an effective way of increasing the uptake of certification in developing countries.

Increased compliance with buyer requirements. Even if fisheries are certified, realising the benefits of certification is likely to be constrained if producers and exporters are not able to comply with buyer requirements and legislative requirements in importing countries that have nothing to do with certification i.e. hygiene, quality, reliability, batch volumes, labelling, etc. Producers should therefore focus on these other requirements.

Some of these suggested actions are already being taken to differing degrees. Thus, increasing support is certainly being demonstrated by retailers for certification as noted in Sections 2.3 and 3.2.2, the MSC are working on certification in data deficient fisheries, and many donors have been providing funding and support of certification. To inform and underpin their Guidelines for the Eco-labelling of Fish and Fishery Products from Marine Capture Fisheries, FAO is also in the process of developing a series of case studies which will examine the opportunities, constraints, and cost and benefits of small-scale fisheries certification and labelling schemes. And while not necessarily with certification as the principle objective, many donors work with developing country governments to improve fisheries management and to facilitate trade.

However, schemes other than the MSC may also need to more explicitly recognise the data-deficient nature of many fisheries in developing countries, and demonstrating the benefits of certification (especially through the use of rigorous cost benefit analysis) appears to be something that has been inadequately supported and documented to date. Other possible actions which have not been so well supported include a) consumer campaigns to explicitly and directly deal with the fact that if consumers want to consume sustainable seafood they may have to pay for it, and b) campaigns to build consumer and retailer demand for certification in developing countries.

It is with these thoughts in mind that the following final section of this report, having summarised some conclusions, makes some specific recommendations for UNEP and others with regards to their ongoing work to support certification in developing countries.

5. Conclusions and recommendations for future UNEP activities in support of certification

The analysis and literature review conducted as part of this report suggests some conclusions which can be grouped around three main themes:

The demand and need for certification

- Developing country trade in fish products has been increasing rapidly in recent years, both in real terms, and as a share of the total value of global trade. Much of this trade originates from small-scale fisheries;
- Fisheries management in developing countries is often weak, and as with developed country fisheries, a very large proportion of developing country fisheries are either fully-exploited or over-exploited;
- Demand for certified fish products is suddenly gaining significant momentum. It seems likely that the sale of certified products may be changing from a niche marketing issue, to one that is much more mainstream;
- Demand for certification is being most strongly driven by retailers, many of which have now made public commitments about sustainable sourcing policies. These retailers have significant market power and an ability to influence their suppliers;
- Demand for certified products is not uniform between countries, market segments (e.g. retail vs food service sector), individual businesses, or species. These differences in demand are significant and are likely to remain in the future, even if reduced to some extent as overall demand for certification grows; and
- Demand already far outstrips the availability of certified products;

The experiences of certification to date and its potential to bring about sustainable fisheries and other benefits

- While certification schemes have so far tended to focus on fisheries that are already well managed, certification does appear to offer some potential to affect fisheries management improvements, and less well managed fisheries are increasingly likely to seek certification in the future, given the increases in demand for certified products;
- Certification can also offer other benefits to producers in the form of improved or maintained market access, and potentially price improvements. While good systematic evidence for the latter benefit is not generally available, the growing imbalance between demand for, and supply of certified products, may be taken as evidence for some price impacts;
- The burden of costs involved with certification are far greater for the fisheries being certified, than for the businesses in the supply chain obtaining chain of custody certification;

What still needs to be done?

- The challenges for developing country fisheries to become certified are numerous. These challenges in turn provide an array of entry points for those wishing to support certification. Different entry points may be applicable to different stakeholders. For example, if retailers are serious about obtaining more certified products they may have to combine consumer campaigns to increase consumer willingness to pay, with ensuring that price premiums for certified products are distributed through the supply chain and reach the producer. For scheme managers themselves, efforts to simplify certification (without compromising on standards), reduce the costs of certification, and build momentum with consumers and retailers in developing countries, may be paramount. For UNEP, possible relevant entry-points could include support for management improvements, improved data, capacity development and pre- and post-certification studies on management practices to demonstrate changes and resulting benefits;
- Many of these entry points should not be dealt with by one type of stakeholder alone, but should rather be pursued through joint public and private sector engagement. Such an approach is likely to increase the uptake of certification and to maximize its benefits; and
- Further work needs to be conducted to explore the relationship between sustainability criteria being developed in WTO negotiations for subsidy reform, the FAO Eco-Labelling Guidelines, and the criteria used in the main eco-labels, so as to ensure coherence and effectiveness between these different initiatives.

It is against this background that UNEP could explore how to support certification in developing countries in partnership with other relevant institutions. Future activities to support certification under the project 'Promoting Sustainable Trade, Consumption and Production Patterns in the Fisheries Sector' can be recommended, given the potential of certification to promote sustainable management and the fact that sustainable management is an aim of the project. UNEP is recommended to continue its support for certification given the direct links to the project component on fisheries subsidies reform, and given that the reduction of subsidies, like certification, can be expected to contribute to a reduction in unsustainable fishing practices. Additional justification comes from linkages between sustainability and subsidies such as the fact that the MSC management system criteria for assessment include a requirement that the management system 'provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing'. Suggested sustainability criteria for fisheries subsidies reform at the WTO and beyond[41] also refer to the FAO Eco-Labelling Guidelines since the latter contain basic management standards.

[41] See: UNEP and WWF (2007): Sustainability Criteria for Fisheries Subsidies – Options for the WTO and Beyond, available at: www.unep.ch/etb

Support for certification by UNEP and others is especially necessary given current constraints to certification, and the poor state of fisheries management in many developing countries. For example, specific project activities that could be supported include activities aimed at minimizing the current constraints to certification, such as:

- A review of data quality, collection methods, storage, and subsequent analysis and use for improved management, so as to comply with best-practice;
- Training and "gap analysis" on any mismatch between current management regimes and practices compared to the certification criteria of particular certification schemes that a country may wish to pursue, and to the FAO Code of Conduct for Responsible Fisheries.
- Support for a joint private-public sector advisory group tasked with developing and implementing a certification programme for relevant fisheries in a particular country. The members of this advisory group would be formally invited/selected by the relevant government ministry, and would primarily be constituted of national stakeholders from both private and public sectors. However, governments should also consider participation and representation by staff from relevant bilateral and multi-national organisations, and such organisations could also provide support to advisory groups in the form of technical support, funding, and capacity building. The principle roles of the advisory group could be to:

  - assess the appropriateness of different fisheries for certification (based on management practices, volumes and values of products, interest in certification in destination markets, etc)
  - aim to leverage funding for the certification process
  - generate joint private-public support for any necessary changes to management and exploitation practices, and
  - assign specific responsibilities to different parties to ensure that certification is successfully completed.

  As noted above, an important element of such in-country advisory groups in terms of generating support for certification in other countries, would be to carefully document their own activities, the management changes that resulted throughout the certification process, and other resulting benefits that accrued to different stakeholders.

In engaging with such activities, UNEP is recommended to work in partnership with all relevant stakeholders, but perhaps especially with a) FAO and their on-going work on certification in small scale fisheries, b) the advisory groups in developing countries proposed above, c) the MSC given its strong support from retailers, and d) those retailers (as highlighted in Section 2.3) that have demonstrated a particular interest in certification. Dialogue could be established with all these groups, and other interested donors, on how partnerships could be established so as to further achieve the aim of certification in developing countries.

Appendices

Appendix A: References

Agnew, D., C. Grieve, P. Orr, G. Parkes and N. Barker, 2006. Environmental benefits resulting from certification against MSC's Principles and Criteria for Sustainable Fishing. MRAG UK Ltd and Marine Stewardship Council, London. 134 pp.

Béné, C.; Macfadyen, G.; Allison, E.H., 2007. Increasing the contribution of small-scale fisheries to poverty alleviation and food security. *FAO Fisheries Technical Paper. Nº 481*. Rome, FAO. 2007. 125p.

Cochrane, K.L. (ed.), 2002. A fishery manager's guidebook. Management measures and their application. FAO Fisheries Technical Paper, No. 424. 231p. FAO Rome.

FAO, 1997. Fisheries management. Fishery Resources Division and Fishery Policy and Planning Division. FAO Technical Guidelines for Responsible Fisheries. No. 4., 82p, Rome, FAO.

FAO, 2003. The ecosystem approach to fisheries. Fisheries Department. FAO Technical Guidelines for Responsible Fisheries. No. 4, Suppl. 2, 112 p. FAO, Rome.

FAO, 2005. Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries.

FAO, 2006. The State Of World Fisheries and Aquaculture 2006.

FAO, 2008. The State Of World Fisheries and Aquaculture 2008.

Gardiner, P .R . and Viswanathan, K., 2004. Eco-labelling and Fisheries Management. WorldFish Centre.

Greenpeace, 2005. A Recipe for Disaster.

Jayme, K., Romero, F., Ingles, J., 2003. Community-Based Certification of the Blue Crab Fishery of the Northeastern Guimaras Strait, Negros Occidental, Philippines: Lessons learned, prospects and directions.

Jodice, L. et al, 2006. Preferences for local, wild-harvested shrimp among coastal tourists in South Carolina. IIFET 2006 Portsmouth Proceedings.

Johnston, R.J., C.R. Wessells, H. Donath and F. Asche, 2001. 'A Contingent Choice Analysis of Ecolabelled Seafood: Comparing Consumer Preferences in the United States and Norway.' Journal of Agricultural and Resource Economics, 26(1):20-39.

Kurien, J., 2004. Responsible fish trade and food security – toward understanding the relationship between international fish trade and food security. Rome, FAO.: Food and Agriculture Organization and Royal Norwegian Ministry of Foreign Affairs, 107 p.

Macfadyen, G., Banks, R, Phillips, M, Haylor, G., Mazaudier, L. and Salz, P. 2003. Output 1 Background paper on the International Seafood Trade and Poverty. Prepared under the DFID-funded EC-PREP project (EP/R03/014) "International Seafood Trade: Supporting Sustainable Livelihoods

Among Poor Aquatic Resource Users in Asia". Poseidon Aquatic Resource Management Ltd (UK), Network of Aquaculture Centres in Asia-Pacific and STREAM Initiative.

Macfadyen, G., Banks, R, Phillips, M, Haylor, G., Mazaudier, L. and Salz, P. (2003). Output 1 Background paper on the International Seafood Trade and Poverty. Prepared under the DFID-funded ECPREP project (EP/R03/014) "International Seafood Trade: Supporting Sustainable Livelihoods Among Poor Aquatic Resource Users in Asia". Poseidon Aquatic Resource Management Ltd (UK), Network of Aquaculture Centers in Asia-Pacific and STREAM Initiative.

Monfort, M-C., 2007. Ecolabelling Schemes for Fisheries Products, FAO publication.

MSC, 2006. Workshop on Fisheries Certification and Ecolabelling: Marine Stewardship Council/ Gambia Artisanal Fisheries Development Agency. 25th and 26th April 2006. Palm Grove Hotel, Banjul, The Gambia. Workshop Report.

Nautilus Consultants Ltd / IIED, 2003. Investment mechanisms for socially and environmentally responsible shrimp culture (Synthesis Summary and Working Papers.

Olivier, K., 2001. The ornamental fish market. FAO.

Porritt, J. 2005. Fishing for Good. Forum for the Future.

Roheim, C., and Sutinen, J., (2006) Trade and Marketplace Measures to Promote Sustainable Fishing Practices, ICTSD Natural Resources, International Trade and Sustainable Development Series Issue Paper No. 3, International Centre for Trade and Sustainable Development and the High Seas Task Force, Geneva, Switzerland.

Roheim, C., and Sutinen, J., (2006) Trade and Marketplace Measures to Promote Sustainable Fishing Practices, ICTSD Natural Resources, International Trade and Sustainable Development Series Issue Paper No. 3, International Centre for Trade and Sustainable Development and the High Seas Task Force, Geneva, Switzerland.

Rubec, P., et al, 2000. Cyanide-free, net caught fish for the marine aquarium trade. Secretariat of the Pacific Live Reef Fish Bulletin, 7, 28-34.

Seafood Choices Alliance, 2007. The market place for sustainable seafood.

UNEP. 2005. The Trade and Environmental Effects of Ecolabels: Assessment and Response.

UNEP/WWF, 2007. Sustainability Criteria for Fisheries Subsidies – Options for the WTO and beyond.

Wessells, C.R., R. Johnston and H. Donath, 1999. 'Assessing Consumer Preferences for Ecolabelled Seafood: The Influence of Species, Certifier and Household Attributes.' American Journal of Agricultural Economics 81(5): 1084-1089.

Wood, E.M., 2001. Collection of coral reef fish for aquaria: global trade, conservation issues and management strategies. Marine Conservation Society, UK. 80pp.

Appendix B: MSC Principles and Criteria

PRINCIPLE 1

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery[42]:

Intent:

The intent of this principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favour of short term interests. Thus, exploited populations would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.

Criteria:

1. The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity.
2. Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.
3. Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity.

PRINCIPLE 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Intent:

The intent of this principle is to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.

[42] The sequence in which the Principles and Criteria appear does not represent a ranking of their significance, but is rather intended to provide a logical guide to certifiers when assessing a fishery. The criteria by which the MSC Principles will be implemented will be reviewed and revised as appropriate in light of relevant new information, technologies and additional consultations

Criteria:

1. The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes.
2. The fishery is conducted in a manner that does not threaten biological diversity at the genetic, species or population levels and avoids or minimises mortality of, or injuries to endangered, threatened or protected species.
3. Where exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields.

PRINCIPLE 3:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

Intent:

The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

A. Management System Criteria:

1. The fishery shall not be conducted under a controversial unilateral exemption to an international agreement.

The management system shall:

2. demonstrate clear long-term objectives consistent with MSC Principles and Criteria and contain a consultative process that is transparent and involves all interested and affected parties so as to consider all relevant information, including local knowledge. The impact of fishery management decisions on all those who depend on the fishery for their livelihoods, including, but not confined to subsistence, artisanal, and fishing-dependent communities shall be addressed as part of this process;
3. be appropriate to the cultural context, scale and intensity of the fishery – reflecting specific objectives, incorporating operational criteria, containing procedures for implementation and a process for monitoring and evaluating performance and acting on findings;
4. observe the legal and customary rights and long term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability;
5. incorporates an appropriate mechanism for the resolution of disputes arising within the system[43];
6. provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing;

[43] Outstanding disputes of substantial magnitude involving a significant number of interests will normally disqualify a fishery from certification

7. act in a timely and adaptive fashion on the basis of the best available information using a precautionary approach particularly when dealing with scientific uncertainty;
8. incorporate a research plan – appropriate to the scale and intensity of the fishery – that addresses the information needs of management and provides for the dissemination of research results to all interested parties in a timely fashion;
9. require that assessments of the biological status of the resource and impacts of the fishery have been and are periodically conducted;
10. specify measures and strategies that demonstrably control the degree of exploitation of the resource, including, but not limited to:
    a) setting catch levels that will maintain the target population and ecological community's high productivity relative to its potential productivity, and account for the non-target species (or size, age, sex) captured and landed in association with, or as a consequence of, fishing for target species;
    b) identifying appropriate fishing methods that minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
    c) providing for the recovery and rebuilding of depleted fish populations to specified levels within specified time frames;
    d) mechanisms in place to limit or close fisheries when designated catch limits are reached;
    e) establishing no-take zones where appropriate;
11. contains appropriate procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure that established limits to exploitation are not exceeded and specifies corrective actions to be taken in the event that they are.

<u>B. Operational Criteria</u>

Fishing operation shall:

12. make use of fishing gear and practices designed to avoid the capture of non-target species (and non-target size, age, and/or sex of the target species); minimise mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive;
13. implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
14. not use destructive fishing practices such as fishing with poisons or explosives;
15. minimise operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.;
16. be conducted in compliance with the fishery management system and all legal and administrative requirements; and
17. assist and co-operate with management authorities in the collection of catch, discard, and other information of importance to effective management of the resources and the fishery.

Appendix C: Other certification scheme standards

MAC International Standards outline the requirements for third-party certification of quality and sustainability in the marine aquarium industry from reef to retail. There are four MAC International Standards covering the "reef to retail" supply chain.

- The Ecosystem and Fishery Management (EFM) international Standard addresses in-situ habitat, stock and species management and conservation by verifying that the collection area is managed according to principles that ensure ecosystem health and the sustainable use of the marine aquarium fishery.
- The Collection, Fishing and Holding (CFH) international Standard addresses harvesting of fish, coral, live rock and other coral reef organisms, handling prior to export, holding, plus packaging and transport to ensure the health of the collection area, sustainable use of the marine aquarium fishery and optimal health of the harvested organisms.
- The Handling, Husbandry and Transport (HHT) international Standard addresses the handling and tracing of marine life during export, import and retail to ensure their optimal health, their segregation from uncertified organisms and proper documentation to show that they pass only from one MAC Certified industry operator to another.
- The Mariculture and Aquaculture Management international Standard addresses the propagation, collection, and culturing of marine aquarium organisms, and specifies requirements from broodstock/post-larvae receipt through to grow-out for market; packaging and transport of cultured marine ornamentals.

Dolphin-safe tuna standards

In order for tuna to be considered "Dolphin Safe", it must meet the following standards:

1. No intentional chasing, netting or encirclement of dolphins during an entire tuna fishing trip;
2. No use of drift gill nets to catch tuna;
3. No accidental killing or serious injury to any dolphins during net sets;
4. No mixing of dolphin-safe and dolphin-deadly tuna in individual boat wells (for accidental kill of dolphins), or in processing or storage facilities; and
5. Each trip in the Eastern Tropical Pacific Ocean (ETP) by vessels 400 gross tons and above must have an independent observer on board attesting to the compliance with points (1) through (4) above.

Naturland Standards

Selected text only. For full details see http://www.naturland.de/fileadmin/MDB/documents/Richtlinien_englisch/Naturland-Standards_Sustainable-Fishing_2007-05.pdf

Social responsibility

The holistic claim of Naturland standards also includes the social treatment of the people who work and live on the fishing projects.

1. Human rights

The basic rights of the people living and working on Naturland operations are respected. They must comply at the minimum with the local legal requirements, respectively the human rights listed in the UN Conventions, the International Labour Organization Conventions and Recommendations (ILO), and the UN conventions on children's rights, should these be more comprehensive. A product created under conditions violating basic human rights or under gross violation of social justice cannot be traded as a product certified by Naturland.

2. Forced labour

The operations commit themselves to rejecting forced labour and any type of involuntary work. The operation shall not retain any part of the workers' salaries, benefits, property, or documents in order to force workers to remain on the fishing project.

3. Freedom of association, access to trade unions

All workers have a right to freedom of association and collective bargaining, and are at liberty to exercise this right. No one shall be discriminated against because of his or her membership in a trade union.

4. Equal treatment and opportunities

No discrimination on the basis of race, creed, sex, political opinion or membership shall be tolerated. All workers, irrespective of their sex, skin colour or religion receive the same pay and have the same opportunities for work of the same nature and same degree of responsibility.

5. Child labour

No children may be employed on fishing projects. Children may work in the businesses of their own families or a neighbouring business provided that:

– the work is not hazardous and endangers neither the health nor the safety of the children
– the work jeopardises neither the educational nor the moral, social or physical development of the children
– the children are supervised by adults while working or have been given permission by a parent or legal guardian

6. Health and safety

All workers, employees and their families shall have access to drinking water, food, accommodation and basic medical care.

The employer is responsible for safety and health at the workplace. If necessary, this implies instructing workers about safety at work. Operations with more than 10 workers have to draw up a policy on safety at work.

7. Employment conditions

Workers, for the purpose of these standards, are, besides the permanent workers, also seasonal workers and sub-contracted workers. All operations with at least 10 workers commit themselves to meeting the following requirements.

7.1 Contracts

All workers receive a written contract of employment describing the basic conditions of employment. Working conditions and contracts have to be documented by the employer to be verified at any time. The employment contract shall at least define the following: job description, scope and limits of the job, and type as well as amount of remuneration. The employment conditions of all workers have at least to comply with the respective higher of the requirements of national regulations and ILO standards.

7.2 Equal treatment

The different kinds of employment shall in no case result in the unequal treatment of any workers: all workers are considered to enjoy the same rights and working conditions including social benefits and other privileges for work of the same nature and same degree of responsibility (see III.4).

7.3 Wages

Workers shall be paid at least the official national minimum wage or the relevant industry standard when employed in processing operations. Workers shall be paid in cash, or in any other manner of their choice.

7.4 Payment in kind

If they so choose, workers may receive part of their wage in kind for services such as housing, food or others offered by the operation. The value attributed to such deductions shall be fair and reasonable. Compulsive deductions from the minimum wage for such services are not permitted.

7.5 Working hours

To permit flexibility and overtime in the peak season, an annual limit of working hours or a mutual agreement on overtime requirements in the peak period (for a maximum of 6 weeks) is necessary. Such an agreement has to be in line with current national labour legislation and ILO Convention C184.

7.6 Social benefits

The employer ensures basic coverage for maternity, sickness and retirement. Operations with more than 10 workers need to make a policy on wages and social security available to all workers.

7.7 Further education

The operation offer its employees the possibility of further education and professional training.

Regulations for Sustainable Capture Fishery

The Naturland certification of products from sustainable capture fishery covers unprocessed products from both freshwater and marine fisheries, namely species of finfish, invertebrates, and plant. The produce originates from fishery projects, the formal and operational structures of which may take any of several forms, such as one-man businesses, fishing co-operatives, or fishermen bound contractually to a processing company.

1. Project-specific management conditions and certification procedure

1.1 Besides the general regulations for sustainable fishery listed in Part B, project-specific management conditions are imposed on each fishery project. Taken together with the regulations

under B 2–3, these special conditions constitute a catalogue of measures to be adopted in the management plan and quality assurance system of the project. The conditions are the result of an expert survey of each fishing project to be performed. Naturland decides whether to accept the list of experts proposed either by the fishery project or a third party and can, where justified, reject the list or ask for changes to be made. The experts on the list should cover the following fields:

– scientific institutions which deal with the respective type of fishery (primarily for current information on the status of the stock and on the aquatic ecosystem)
– fishing authorities (legal requirements, national and international development aims)
– NGOs (social and ecological aspects)
– organizations from the fishing and/or processing industries (technical, social and economic aspects).

1.2 To ensure that the regulations compiled in the project-specific management conditions are kept up to date, each expert survey is performed every two years at the minimum.

In principle, the fishery project bears responsibility for the expert survey being performed according to schedule. This also holds true for the case that the project has to supply the experts with pertinent data for them to be able to assess the situation of a fishery. The project-specific management conditions for each individual fishing project must be passed by Naturland's standards committee.

1.3 Naturland publishes the section of the inspection report which is relevant to the public on its home page, so as to reach as wide an audience as possible from whom to learn of any possible objections to the certification of the enterprise in question, to acquire additional information and to hear different points of view. This section of the inspection report is published at least four weeks before the meeting of the committee at which the certification of the enterprise is to be decided. The enterprise is given an opportunity to reply to the objections raised.

2. Ecology

2.1 The project performs its fishing activities in such a way that integrity of the ecosystem is maintained long-term, concerning both the stocks of the economically relevant species as well as the other components of the ecosystem.

2.2 Subject of the evaluation is the geographical catchment area of the respective fishery project or the project's share in the total exploitation of a certain species.

2.3 In the case of species which only occur temporarily in the catchment area of the project, or which do not spend their whole life cycle there, an evaluation is made of whether the management form of the project were compatible with maintaining the total stock volume if this management form were adopted by all the enterprises involved in fishing this species in this way (exemplary character).

2.4 Even if the fishing project is proven to be managed in an exemplary sustainable manner, Naturland reserves the right not to certify the project, or to defer certification, if the total stock of a species should be critically jeopardised by other factors.

2.5 If no exclusively used geographic area can be attributed to the project (e.g. in deep-sea fishery), the evaluation is made based not only on the fishing practices of the project but also on the total situation of the stocks in question.

2.6 Practices which are generally deemed as detrimental or critical from an ecological point of view are prohibited. These include the following regulations in addition to the project-specific management conditions defined:

– catching marine mammals and ocean turtles
– catching sharks for their fins (“finning“)
– the use of poisons and explosives in fishing
– damage to coral reefs (including cold-water corals)
– beam trawl fishing as well as demersal trawling on highly structured sea beds
– demersal trawling without suitable escape hatches to keep bycatches to a minimum.

2.7 The project-specific management conditions govern the following in particular:

– minimum size and maximum quantities
– equipment and techniques employed
– close seasons and sanctuaries
– avoidance or minimisation of bycatches
– other measures which help to protect the aquatic ecosystem and/or individual species (e.g. protection of breeding colonies)
– protocols for monitoring of relevant pollutants, determination of specific alert/reporting values and threshold values.

3. Social and economic aspects

3.1 Naturland’s standards governing social responsibility apply (ref. A.III. of these standards).

3.2 In addition, allowances have to be made for the situation of many fishermen in the developing countries. Fishery projects (resp. the processors or exporters of the fishery produce) bears responsibility not only for the fishermen to meet with fair working conditions (ref. A. III), but also for adequate living conditions out of working hours. Depending on socio-economic circumstances, those responsible must introduce the requisite measures in a suitable manner. These include especially:

– adequate board and lodging
– access to banking and insurance services
– health care
– schooling for the children
– transport possibilities

This is especially applicable if the fishermen and –women are not capable of fulfilling these basic needs from the sale of their products. This is the case, for example, when there is a glut or where seasonal yields fluctuate dramatically, and in cases of over-dependence on fishing as the sole source of income.

3.3 The project-specific management conditions govern, in particular:

– special social aspects, particularly in relation to the situation in developing countries
– measures designed to avoid conflicts with other users of the resources

4. Legal framework and management

4.1 Fishing is performed in compliance with national and international law. The fishing project has to be able to produce the corresponding documents and proof in full and freshly updated.

4.2 The fishing project (or the processor or exporter of the fishing produce) is responsible for its staff and workers being familiar with the contents of these standards. Appropriate training sessions and material have to be provided to guarantee that the catalogue of measures is complied with.

4.3 The management of the fishing project must be able to prove that the requirements laid down in the standards and the project-specific management conditions are implemented systematically, effectively and promptly at every level. This proof includes:

– consistent records and analysis of the catch data
– feedback between the current catch data and the fishing practice in place
– knowledge of current national and international regulations and fulfilment of the duties arising there from
– establishment of mechanisms guaranteeing regular communication between the project and the fishermen with regard to social matters
– existence of and compliance with a development plan (e.g. for deficient issues)

4.4 The project-specific management conditions govern in particular:

– obligatory documentation requirements and internal control system.

Friend of the Sea Standards: (source: www.friendofthesea.org)

FOS Principles

The following principles apply to Friend of the Sea eco-labelling scheme for marine capture fisheries and aquaculture, in its mission to certify and promote seafood from sustainable fisheries and aquaculture:

1. Be consistent with the 1982 United Nations Convention on the Law of the Sea and the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, the FAO Code of Conduct for Responsible Fisheries and the World Trade Organization (WTO) rules and other relevant international instruments.
2. Recognize the sovereign rights of States and comply with all relevant laws and regulations.
3. Be of a voluntary nature and market-driven.
4. Be transparent, including balanced and fair participation by all interested parties.
5. Be non-discriminatory, do not create unnecessary obstacles to trade competition.
6. Provide the opportunity to enter international markets.
7. Establish clear accountability for the owners of schemes and the certification bodies in conformity with international standards.
8. Incorporate reliable, independent auditing and verification procedures.
9. Be considered equivalent if consistent with the FAO guidelines.

10. Be based on the best scientific evidence available, also taking into account traditional knowledge of the resources provided that its validity can be objectively verified.
11. Be practical, viable and verifiable.
12. Ensure that labels communicate truthful information.
13. Provide for clarity.
14. Be based, at a minimum, on the minimum substantive requirements, criteria and procedures outlined in the FAO guidelines.
15. The principle of transparency applies to all aspects of the scheme including its organizational structure and financial arrangements.

FOS Approval Criteria

Introduction:

Friend of the Sea Approval Criteria for Sustainable Fisheries are based on the following principles:

Executive Summary

3.4 Can certification bring about improved management?

3.5 Future prospects for certification

4 Suggested ways of increasing certification in developing countries

5 Conclusions and recommendations for future UNEP activities in support of certification

These 5 criteria are declined in specific requirements with three levels of importance: Essential, Important, Recommended

Essential Requirements: compliance of 100 percent of Essential applicable requirements is needed for the Organization to be recommended for certification. Any deficiency against one of these requirements is considered as Major Non Conformity and the relevant Corrective Actions must be implemented by the Organization in a maximum time of 3 months since the date the Major Non Conformity was raised. The Organization must provide Certification Body with satisfactory evidence of all Major Con Conformities having been rectified.

Important Requirements: compliance of 100 percent of Important applicable requirements is needed for the Organization to be recommended for certification. Any deficiency against one of these requirements is considered as a Minor Non Conformity and the relevant proposal of Corrective Action (state of intent & action plan) must be submitted by the Organization to Certification Body within a maximum period of 3 weeks since the date the Non Conformity was raised. In the proposal the Organization must define the timescale to implement every Corrective Action (maximum time to full implementation: 1 year since the date the Minor Non Conformity was raised).

Recommended requirements: it is not strictly necessary to comply with this kind of requirement in order to be granted the certificate. Nevertheless, all the applicable requirements will be inspected and any gap will be always reported in the Audit Report as a recommendation. In case of recommendation the Organization has to evaluate if corrective actions are needed and, by the next surveillance audit, has to inform Certification Body about its decision and about any Corrective Actions applied.

Friend of the Sea Criteria are categorical in nature and based on the most restrictive and worldwide acknowledged and accepted definition of ‘sustainable fisheries’. On this matter Friend of the Sea has taken in due consideration requests from stakeholders, such as NGOs and traditional and artisanal fisheries, for a more limitative definition of ‘sustainable fisheries’.

A Sustainable Fishery, in the strictest sense, is indeed one that:

1. Does not insist on an overexploited, depleted or data deficient stock;
2. Has no impact on the seabed;
3. Has lower than average discard level;
4. Complies with all local national and international legislation
5. Apply a management system that assures the respect of above mentioned requirements.

1 – SPECIES AND STOCK STATUS CRITERIA: fisheries targeting not overexploited stocks

n°	Requirement	Level
	The targeted and by-caught species CANNOT BE:	
1.1	Included in the IUCN Redlist of endangered species	Essential
1.2	Overexploited nor Depleted nor Recovering, based on the most recent FAO and Regional Fishery Bodies assessment. An exception is made for those traditional fisheries which a) respect all other criteria; b) represent not more than 10 percent of the total catch of the overexploited stock; c) should be taken as a positive example of well managed low impact fisheries and thus be promoted.	Essential
1.3	Data Deficient	Essential

This criteria allows for the approval of only those fisheries insisting on currently not overexploited stocks for which there is sufficient available data for assessment.

It is the most restrictive criteria conceivable for sustainable fisheries.

It allows for a fast, categorical and updatable assessment.

The criteria also equally considers the health of the stock of occurring by-catch species, further requesting that none of the caught species be among those included in the IUCN Redlist of endangered species.

This criteria has allowed Friend of the Sea to generate a list of Sustainable and a list of Unsustainable Fisheries.

By referring to FAO and Regional Fishery Bodies assessments, Friend of the Sea takes into consideration the most reliable, complete, official and widely accepted opinions on stocks status.

2 – SEABED IMPACT CRITERIA: respect of benthic habitat

n°	Requirement	Level
2.1	The targeted species CANNOT be fished by gears which impact the seabed unless evidence is provided that the impact on the seabed is negligible.	Essential

This criteria acknowledges NGOs and other stakeholders' request for a ban on use of Bottom Trawlers and Dredges, considering the unsustainable impact on the seafloor evidenced by the greatest majority of the published scientific reports.

3 – SELECTIVITY CRITERIA: fishing methods with lower than average discard levels

n°	Requirement	Level
3.1	The targeted species CANNOT be fished by gears which have discard levels higher than 8 percent, considered by FAO 2005 to be the average discard level worldwide.	Essential

The most updated and official information about discards levels per fishing gear is used, in order to assess products against this criteria.

4 – LEGAL CRITERIA: TAC, IUU, FOC and legislation

n°	Requirement	Level
	The fleet fishing the audited product must:	
4.1	Respect Total Allowable Catches (TACs), if in place	Essential
4.2	Include NO IUU (Illegal, Unreported, Unregulated) fishing vessels in order to allow companies and stakeholders to monitor their suppliers and the origin of their raw material	Essential
4.3	Include NO FOC (Flag Of Convenience) fishing vessels in order to allow companies and stakeholders to monitor their suppliers and the origin of their raw material	Essential
4.4	Respect national and international legislation	Essential

The criteria focuses on legal aspects which are often given for granted but which can standalone represent a relevant barrier to approval, as the IUU and FOC evidence is beginning to surface and as several fisheries do not respect TACs.

Friend of the Sea maintains a list of IUU and FOC in order to allow companies and stakeholders to monitor their suppliers and the origin of their raw material.

5 – MANAGEMENT CRITERIA: Monitoring and Precautionary Approach

nº	Requirement	Level
	The Organization should:	
1.1	be managed accordingly to its size and cultural context	Recomm.
1.2	Operate following the Precautionary Principle	Recomm.
1.3	Incorporate a monitoring and research process	Recomm.

Differently from criteria 1, 2, 3 and 4 criteria 5 is not categorical nor as stringent. On the field experience has shown that fulfilment of Criteria 5 is a direct consequence of fulfilment of criteria 1, 2, 3 and 4. As an example, a Fishery whose stock is considered as Fully Exploited by FAO, must necessarily have incorporated a monitoring and research process (otherwise it would be data deficient).

6 – TRACEABILITY: a system is in place

nº	Requirement	Level
6.1	The Organization guarantees that a specific traceability system is in place in order to demonstrate that the product audited respects all requirements of this Standard and there is no possibility of mix with other products not under certification.	Essential

Appendix D: Ornamental reef fish supply chain

The supply chain for exports of ornamental species involves collectors/fishers, wholesalers, middlemen and exporters. There are thousands of collectors spread over wide areas, hundreds of middlemen and numerous exporting companies. For the importing country, links in the supply chain involve import companies, wholesalers, retailers, and transhippers.

Collectors tend to be small-scale fishermen who work alone or in small groups using basic equipment such as 'tickler' sticks, hand nets and barrier nets. Scuba and hookah gear are also used.[44] Fish and invertebrates are usually brought back to shore the same day as they are caught, but in some countries, because collection sites tend to be fairly isolated, species may be onboard vessels for several days before being landed. Once ashore, species are placed in holding tanks, or immediately packaged for transport and/or export.

Ingredients for an economically successful fishery include access to popular species that can be supplied in high numbers, as well as species not available from other sources. Proximity of the collection sites to international air links is also important, especially in relation to ensuring that species can be exported that are not too stressed.

Fishermen are usually paid by the number of fish they have collected, and the difference between the price they receive and the price to the end consumer appears to be greater the more middlemen there are employed in the supply chain in the exporting country. A recent study in the Philippines showed that of the price paid for fish by exporters, about 85 percent went to middlemen whereas only 15 percent went to collectors (Rubec et al 2000). Wood (2001) reports that if the collector is also the exporter (which occurs in some small ornamental fisheries) then he receives the full export value. If he sells directly to the exporter he may receive around half of the export price, but if he sells to a middleman then he may receive only one tenth of the export price. The free on board price (f.o.b) itself is strongly determined by the abundance and demand for the species concerned. F.o.b prices for small abundant species may be as little as $0.10, readily available but more interesting species may range from $1-5, with less common/more exotic species (e.g. ribbon eels, clown triggerfish, angelfish) selling for between $10-30. Rarities such as unusual hybrids or deepwater species may have an f.o.b. value of many hundreds of dollars. Prices are also strongly determined by the reputation of survival rates for species from different areas.

[44] Wood (2001) reports that according to Rubec et al. (2000), many of the 300 collectors based on Olango Island (off the east coast of Cebu) are third generation cyanide users and they have destroyed the coral reefs for over 300 miles in every direction. The use of cyanide is universally outlawed for the capture both of aquarium and food fishes, but enforcing regulations is difficult. It continues to be used because it is easy to obtain, inexpensive and makes fish catching easier. Even though some collectors have been re-trained to use nets, the amount of cyanide being used is still substantial, and damage continues to be inflicted on fish and other reef life

Middlemen/traders serve a number of important functions (Wood 2001). The principle one is to aggregate small collections of ornamental species into lots of sufficient size to supply the needs of exporters. This aggregation serves to increase the numbers available to exporters and to increase the species available. Middlemen may also serve to direct collection efforts to meet exporters needs, although information on expert prices is seldom passed on to collectors. In addition, middlemen may provide credit to collectors, sometimes in the form of goods and services, and therefore serve to bring in goods and cash into remote communities. However, as Wood notes, "this relationship is open to considerable abuse and it would not be correct to assume that the relationship between trade and collector is always mutually beneficial".

Once at the exporters premises, consolidation usually takes place, and exporters often trade fish with each other to make up orders. Fish are quarantined and starved for at least 48 hours prior to export (to ensure they do not foul their bags). Most fish and invertebrates are packed in double polythene bags filled with one third water and two-thirds oxygen, sealed and placed in boxes for transport. A health certificate issued by the local vetinary services is required in most countries before a shipment can be exported.

Transport to importing countries takes place by plane, with international airline companies shipping species to the importing states. Shipping charges may correspond to around half to two-thirds of the landed price incurred by the importer, hence the large differences between export and retail prices (Olivier 2001, Wood 2001). Fish are packaged according to criteria set by transport associations such as the International Air Transport Association (IATA) and the Animal Transportation Association (AATA).

In the importing country, species must be cleared through customs and receive another vetinary check. Traders in the EU must contact the appropriate national Ministry and file an application for technical certification as well as declare all imported and exported goods. Importers then quarantine the species in wholesale facilities so that they can adjust to different water chemistry, feeding cycles etc. Fish are then sold to other wholesalers, to retailers, directly to retail buyers, or re-exported. Traditional businesses are reported to be under increasing pressure from sales by garden centres and pet supermarkets, and also by transhippers.

Transhipping started in the 1970s and early 1980s and involves several wholesalers or retailers grouping together orders and placing them directly with an exporter. The transhipper then deals with all the bureaucracy of importation and sends boxes to the purchaser without opening them. This activity is sometimes modified and known as 'consolidating' with transhippers taking responsibility for imported species for around 48 hours after import, and offering refunds for any fatalities. Consolidation can bring together a wide range of species from wider geographical areas, and results in fewer shipments therefore keeping shipping costs lower.

These various steps in the supply chain, and the corresponding sales prices are demonstrated in the example below. It is important to note the doubling of price between export and import due to carriage, insurance and freight, and that final retail prices have to make allowances for the costs of running a business in the UK, and the differential value of one dollar in the UK compared to one dollar in Sri Lanka i.e. they do not take account of purchasing power parity. The figures therefore do not say anything quantitative about margins/profits or the benefits that result throughout the supply chain, or anything about the price structure being intrinsically anti-poor. Furthermore, the financial risks get greater the higher up the commodity chain one goes (although this is not to say that the impacts of a lost collection would not cause real hardship for a collector) – collectors may spend little cash on financing a collection trip, while exporters may risk financial losses from exports which they have to pay for in cash without concrete guarantees of (full) payment.

Experience suggests that all stages of the supply chain operate on relatively fixed margins from their respective suppliers one step back down the chain, and that if ways could be found to increase the first sale price, reduce other business-related costs, and/or reduce mortalities, this would generate additional benefits throughout the supply chain.

Table 12: Example of price structure through ornamental supply chain

	Approximate prices (US$) paid for emperor angelfish (Pomacanthus imperator), based on unpublished data from Sri Lanka, and UK dealers lists, 1998.		Example of typical price structure for marine aquarium fish (Perino, 1990)
	Small	Large	
Price paid by dealer to collector	6	9	2.5-12.5
Export price (i.e. fob price of fish without freight costs)	12	24	25
Wholesale price (cif cost of fish plus profit margin)	33	64	50
Retail price (price paid by hobbyist to retailer)	66	124	100

Source: Wood 2001

Appendix E: Other environmental sustainability initiatives

Table 13: Fisheries-specific codes of practice or guidelines

Scheme	Comment
The International Standard for the Trade in Live Reef Food Fish	The Live Reef Food Fish Trade (LRFFT) is used to describe the trade in live reef fish for consumption, mainly in Hong Kong and southern China, involving more than 20 supply countries. With support of the 21 member economies of the APEC Fisheries Working Group, the Marine Aquarium Council, and The Nature Conservancy a voluntary standard and toolkit has been produced covering the capture of wild live reef food fish; the aquaculture of live reef food fish; and the handling, holding distribution and marketing of live reef food fish. No certification or labelling as yet, but this is under discussion. http://www.livefoodfishtrade.org
European Commission work on eco-labelling of responsible fishing	The EC has mandated a Group of Experts to define minimum requirements for "responsible fishing" eco-label schemes run by other groups. A final decision must be adopted by the European Parliament and the Council of the European Union, but it is likely that the Commission will propose that, in accordance with the FAO Guideline for the Eco-labelling of Fish and Fishery products from Marine Capture Fisheries, 5 criteria for minimum standards for all schemes should include: – Precise, objective and verifiable technical criteria – Independent third-party accreditation process – An eco-labelling scheme must be open to all operators, without discrimination – In addition to accreditation/certification procedures, eco-labelling schemes must be properly controlled to ensure that they comply with the minimum requirements – Transparency. Consumers should know what criteria are covered by an eco-label and should thus have easy access to information on the certification standard
FAO Guidelines on Eco-labelling	The FAO guidelines include 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 from FAO's Code of Conduct for Responsible Fisheries. ftp://ftp.fao.org/docrep/fao/008/a0116t/a0116t00.pdf

WWF Community-based Fishery Programme.	The World Wildlife Fund (WWF), who was behind the initial establishment of MSC, established a Community-based Certification Programme in 1999. This is essentially a methodology and guiding framework initiative to introduce the MSC certification approach and to emphasize the participation of local fishers and the recognition of traditional knowledge in the certification process. Around fifteen fisheries have participated to date, including the following: - Dungeness crab fisheries in California and Oregon, USA (both under MSC assessment) - Albacore tuna pole and line fishery in the Northern Pacific (achieved MSC certification in 2007) - Seri Indian community blue crab fishery, Mexico (completed pre-assessment in 2000) - Prainha do Canto Verde lobster fishery, Ceara, Brazil (completed pre-assessment in 2000) - Burry Inlet cockle fishery, Wales, UK (achieved MSC certification 2001, re-certified in 2007) - Sulu Sea blue crab fishery, Philippines (completed pre-assessment in 2000) Through the programme, WWF has developed a pre-analysis model to evaluate fisheries by using a statistical multi-criteria analysis programme to gather basic fisheries data about the fisheries in a given area. This can identify potential candidate for full assessment and can offer a means to create a regional plan for fisheries certification or can be used as a piece of a more broad conservation strategy where MSC certification is used as one tool amongst many.

Table 14: Non-fisheries specific schemes/associations/networks

Scheme	Comment
Global Eco-labelling Network	The Global Eco-labelling Network (GEN) is a non-profit association of third-party, environmental performance labelling and certification organizations and pro-ecolabelling "associates" founded in 1994 to improve, promote, and develop the eco-labelling of products. Has around 30 members (see). No certification or labels itself, but many of its member schemes do. www.gen.gr.jp
International Social and Environmental Accreditation and Labelling Alliance	Association of leading international standard-setting, certification and accreditation organizations that focus on social and environmental issues. Taken individually, the standards and verification systems of ISEAL members represent efforts to define issue-specific elements of social and environmental sustainability. Taken together, they represent a holistic movement, with the ISEAL Alliance providing the framework. Members include: Fairtrade Labelling Organizations; the FSC, the MSC, IFOAM, the MAC, SAI, and the Sustainable Agriculture Network. While not a responsible trade/ production initiative in its own right, it is relevant given its role as a lobby and information-sharing group for its members. The ISEAL Alliance have facilitated a multi-stakeholder dialogue to develop the Code of Good Practice for Setting Social and Environmental Standards as a means to evaluate and strengthen voluntary standards, and to demonstrate their credibility on the basis of how they are developed. All ISEAL standard-setting members are required to show compliance with the ISEAL Code of Good Practice through successful completion of a self-assessment form (F018) and peer review. This procedure applies to all ISEAL member organizations that set social or environmental standards. www.isealalliance.org
European Eco-Management and Audit Scheme (EMAS)	EMAS is a site based registration system with due consideration provided to off site activities that may have a bearing upon the products and services of the primary site. EMAS requires an Environmental Policy to be in existence within an organization, fully supported by senior management, and outlining the policies of the company, not only to the staff but to the general public and other stake holders. The Environmental Management System requires a planned comprehensive periodic audit of the Environmental Management System to ensure that it is effective in operation, is meeting specified goals, and the system continues to perform in accordance with relevant regulations and standards. Under EMAS the bare minimum frequency for an audit is at least once every three years. Certification but no label. European System is not of relevance to AFPIC countries. http://www.quality.co.uk/emas.htm

International Standards Organization (ISO) Environmental Management System	This assesses corporate environmental management systems. ISO provides certification of companies against different standards. ISO 14000 is actually a series of international standards on environmental management. It provides a framework for the development of both the system and the supporting audit program. ISO 14001 is the corner stone standard of the ISO 14000 series. It specifies a framework of control for an Environmental Management System against which an organization's performance and practices can be certified by a third party. ISO 14001 was first published in 1996 and specifies the actual requirements for an environmental management system. It applies to those environmental aspects which the organization has control over and over which it can be expected to have an influence. ISO 14004, also published in 1996, provides guidance on the development and implementation of environmental management systems and principles, and also their co-ordination with other management systems. ISO 19011 offers guidelines for quality and/or environmental management systems auditing. It is based on certification (through third parties) but no label, and certification is not a product guarantee, only a statement about the company concerned. A proposal for a new field of technical activity on fisheries and aquaculture was submitted to the ISO Central Secretariat by Standards Norway (SN) in 2006. The proposed scope is Standardization in the field of fisheries and aquaculture. Important aspects would be environmental awareness, monitoring of biological resources, interface between technology and biology, animal health and welfare, occupational health and safety, food safety, traceability and terminology. Production and utilization of all types of edible materials and products derived from aquatic biological organisms as well as the organisms themselves are included. Excluded would be standardization of water quality (dealt with by ISO/TC 147), fishing nets (dealt with by ISO/TC 38) and food quality and food products as such (dealt with by ISO/TC 34). SN have proposed that ISO develop standards describing test methods, performance requirements, procedures, dimensions and tolerances, technical specifications, formats for information storage and exchange as well as terms and definitions that allow for unambiguous communications.
Various national environmental initiatives	These are not specifically related to fisheries, and indeed in many cases specifically not cover fisheries in the list of products eligible for inclusion. They often deal strongly with manufacturing industry. Some examples in the Asia/Pacific region include: Good environmental choice Australia; Thai Green Label Scheme; Taiwan Green Mark – Environmental Protection Administration Government of the Republic of China; Korea Eco-labelling Program; Environmental Choice New Zealand; GreenTick™ in New Zealand; Japan Environment Association Eco Mark Program; China Environmental United Certification Center Co., Ltd (CEC) Environmental Labelling Programme; Hong Kong Green Label; EcoMark scheme of India.

Table 15: Fisheries-specific consumer guides and organizations/alliance

Scheme	Comment
New Zealand Best Fish Guide	Forest & Bird produced its Best Fish Guide in June 2004. This guide comprises a thorough report on the ecological rankings of New Zealand commercial fisheries, with summaries in the form of a pocket guide (downloadable from the website) and a website-based guide. The Best Fish Guide profiles 62 commercial species, ranking each aspect of the fishery from A (best) to E (worst) and then giving an overall rank for sustainability. This ranking takes into account the state of fish stocks, management and research, bycatch, the damage done to marine habitats and other ecological effects caused by the fishery. No certification or labelling. It should be noted that not one species is on the green list and F&B believe that no NZ fisheries are managed sustainably. http://www.forestandbird.org.nz/bestfishguide/index.asp
Seafood Choices Alliance	Seeks to bring ocean conservation to the table by providing the seafood sector – fishermen, chefs and other purveyors – with the information they need to make choices about seafood and provide the best options to their customers. Seafood Choices encourages the sale and consumption of eco-friendly seafood by raising awareness of these issues among its subscribers and individual consumers. The initiative is US-based and focuses on environmental, rather than social issues, but there is now also a European Campaign. The MCS is now working with the Seafood Choices Alliance and others to develop a common methodology for compiling fish lists. No certification or use of labels. http://www.seafoodchoices.com
Marine Conservation Society	The UK-based Marine Conservation Society manages a website, www.fishonline.org, featuring 124 species in total, 41 of them which it recommends for consumption based on sustainable production, and 43 which it recommends should be avoided. The MCS rates species on a one to five scale, based on a fairly detailed method of assessment including species characteristics, level of stock exploitation, capture method and so on. No certification or use of labels.
Fish Watch	The National Fisheries Institute (NFI) supports a new Internet-based tool called “Fishwatch – U.S. Seafood Facts.” The website gives the latest facts about the sustainability and health benefits of fish. According to NOAA Fisheries, 80 percent of domestic fish stocks are sustainably managed. FishWatch provides profiles including sustainability status, nutrition facts and role in the ecosystem of at least 30 domestic seafood species. The data provided in this consumer-friendly format is developed from NOAA Fisheries’ own scientific stock assessments, fisheries surveys, management plans, environmental analyses and cooperative research. The information on FishWatch prides itself on being the most up-to-date and accurate information available on U.S. fisheries. http://www.nmfs.noaa.gov/fishwatch/

The USA Fish List	The Blue Ocean Institute (BOI), the Environmental Defense Network (EDN),and Monterey Bay Aquarium (MBA) all produce online fish guides and pocket guides. They have also worked with the Seafood Choices Alliance to produce a collaborative guide called The fish list, which consists of a list of 14 'enjoy' and 14 'avoid' species or groups of seafood.
The Responsible Fishing Alliance (RFA)	Responsible Fishing Alliance was publicly launched during the Economic Business Summit in Brussels on March 15, 2007. It brings together fishers' associations, public and private organizations and businesses. The organization currently has 11 members including NGO's, universities, Europe's largest retailer, Carrefour and its newest member, the packaging company Multivac. The Alliance complements other seafood initiatives such as the Marine Stewardship Council by focusing not on certifying but on responsible business-to-business seafood trade. Its members work in development and supply-chain projects that strive to create environments where fishing and fish farming are done in ways that protect the environment, support the social and economic health of small fishing communities, are economically viable, and help meet the increasing demand for fish. The aim is to increase cooperation, environmental awareness and mutual understanding along the seafood value chain. The RFA is active in several locations through concrete projects in the field: – Cooperation with the European Commission's work on a Responsible Fishing Ecolabel, Brussels – Responsibly Produced Nile Perch from Lake Victoria, Africa (working with the Carrefour Group and local groups in Uganda and Tanzania) – Integrated Coastal Management for Small-Scale Fisheries and Aquaculture, Chile. – Reacquisition of Individual Transferable Fishing Quotas for Artisanal Fishers, Iceland http://www.sustainablefood.org/fisheries/
Australia's sustainable seafood guide	The Australian Marine Conservation Society (AMCS) released its Australia's sustainable seafood guide in 2004. As well as providing background on fishing methods, problems with aquaculture, and imported seafood, the guide includes a '3-Step Guide' (also available in a wallet-sized version) to choosing sustainable seafood. This contains a list of 13 species to avoid, questions to ask the fishmonger about other seafood, and a recommendation to avoid all imported seafood. The guide also comes with a pocket booklet called the Sustainable fish finder. This provides pictures and more detailed information on the sustainability of fish and shellfish with 10 'say no'; 5 'say no to some species'; and 19 'better choice' categories. http://www.amcs.org.au/

WWF Guides	A guide for Hong Kong has recently been released by WWF which ranks many Asian fish species (www.wwf.org.hk). There has also been a similar guide produced for Japan. The WWF has a full list of its guides on www.panda.org/about_wwf/what_we_do/marine/our_solutions/sustainable_fishing
UK Seafish	UK SeaFish Industry Authority has launched its series of Responsible Sourcing Guides – a set of factsheets designed to provide fish buyers and interested consumers with objective, scientifically-based information on stock status, gear technology and fisheries conservation measures. The first eight Responsible Sourcing Guides in the series of 20 are currently available, featuring cod, cold water prawn, haddock, plaice, mussels, monkfish, nephrops, mackerel and herring. Future factsheets will feature species including mussels, herring and tuna.
Other Guides	A number of other NGOs and US aquariums also have fish buying guides. In addition, the Sustainable Fisheries Partnership has recently set up a website targeting fish buyers that provides information on environmental performance of fisheries http://www.fishsource.org/ Additional information on a range of other consumer guides is also available on the WWF website provided above.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About the UNEP Division of Technology, Industry and Economics

The UNEP Division of Technology, Industry and Economics (DTIE) helps governments, local authorities and decision-makers in business and industry to develop and implement policies and practices focusing on sustainable development.

The Division works to promote:

- sustainable consumption and production,
- the efficient use of renewable energy,
- adequate management of chemicals,
- the integration of environmental costs in development policies.

The Office of the Director, located in Paris, coordinates activities through:

- **The International Environmental Technology Centre** – IETC (Osaka, Shiga), which implements integrated waste, water and disaster management programmes, focusing in particular on Asia.
- **Sustainable Consumption and Production** (Paris), which promotes sustainable consumption and production patterns as a contribution to human development through global markets.
- **Chemicals** (Geneva), which catalyzes global actions to bring about the sound management of chemicals and the improvement of chemical safety worldwide.
- **Energy** (Paris), which fosters energy and transport policies for sustainable development and encourages investment in renewable energy and energy efficiency.
- **OzonAction** (Paris), which supports the phase-out of ozone depleting substances in developing countries and countries with economies in transition to ensure implementation of the Montreal Protocol.
- **Economics and Trade** (Geneva), which helps countries to integrate environmental considerations into economic and trade policies, and works with the finance sector to incorporate sustainable development policies.
- **Urban Environment** (Nairobi), which supports the integration of the urban dimension, with a focus on environmental issues that have both a local and an international dimension.

UNEP DTIE activities focus on raising awareness, improving the transfer of knowledge and information, fostering technological cooperation and partnerships, and implementing international conventions and agreements.

For more information
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Can the increased use of certification of fisheries products help halt the rapid decline of the world's fish stocks? This is a question crucial not only to conscious consumers, but even more so to producers. It is often suggested that fisheries worldwide would benefit from improved management potentially gained through certification. There are, however, a number of challenges involved, such as overcoming the lack of data for small-scale fisheries. Retailers, on the other hand, would benefit from secured supply in the long-term, but need to create long-term demand for their products.

In addition to providing a comprehensive review of several certification schemes and discussing the obstacles, this publication introduces the sourcing policies of a wide range of retailer chains related to certification. Without filling the gaps in current certification practices and capacity building activities in this field, real improvements in fisheries management will be difficult to achieve.

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