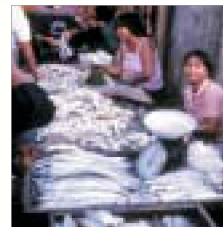


Ecolabelling and Fisheries Management

P.R. Gardiner and K. Kuperan Viswanathan



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Formerly known as "ICLARM – The World Fish Center"

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2004

Published by WorldFish Center

PO Box 500 GPO, 10670 Penang Malaysia

Gardiner, P.R. and K.K.Viswanathan. 2004. Ecolabelling and Fisheries Management.
WorldFish Center Studies and Reviews 27, 44.

Perpustakaan Negara Malaysia. Cataloguing-in-Publication Data

Gardiner,P.R.

Ecolabelling and Fisheries Management/P.R Gardiner and K. Kuperan Viswanathan.

ISBN 983-2346-23-1

1.Eco-labeling 2.Fishery management 3.Fisheries - Economic aspects

4.Fishery conservation. I.Viswanathan, K. Kuperan II.Title

333.956068

Editor: Wendy Tubman

Cover photos by: Ken Ray Communications Sdn Bhd, P.R.Gardiner

and WorldFish photo collection

Design and layout: Ken Ray Communications Sdn Bhd

ISBN 983-2346-23-1

WorldFish Center Contribution No. 1714

Printed by Print Resources, Penang, Malaysia



WorldFish Center is one of the 16 international research centers of the Consultative Group on International Agricultural Research (CGIAR) that has initiated the public awareness campaign, Future Harvest.

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Abstract

National and intergovernmental regulation of fisheries has not prevented many failures of fisheries management around the world.

New approaches to improving the environmental sustainability of fisheries have included the certification of fisheries harvested by sustainable means, and the ecolabelling of fish and seafood products from certified fisheries. The intention is to use the power of markets as an incentive to induce more sustainable fisheries. To date, only a relatively small number of fisheries have been certified, and these have been predominantly in developed countries. Critiques from developing countries of ecolabelling, as currently formulated, focus on five general areas: a) legitimacy and credibility; b) a mismatch between certification requirements and the reality of tropical small-scale fisheries; c) potential distortions to existing practices and livelihoods; d) equity and feasibility; and e) perceived barriers to trade.

This paper reviews these developing country concerns on the basis of already certified fisheries, and on experiences from forestry, aquaculture and the aquarium industry, and also examines precedents and trends in international environmental and trade issues. It suggests that ecolabelling as currently practiced is unlikely to be widely adopted in Asian countries. Certification may have sporadic success in some eco-conscious, or niche, markets but it is unlikely to stimulate global improvement of fisheries management.

The paper argues that to avoid the controversy that accompanies ecolabelling, the focus should be on revision of national fisheries management and not on an *ad hoc* approach to individual fisheries. Improvements in fisheries management, the equitable treatment of fishing sub-sectors and stakeholders within management schemes, and the prospect of reaping increased value-added from fisheries all require government acceptance of needs and actions. Governments should be encouraged to enter into broad coalitions to improve aspects of fisheries management, and to enhance efforts to develop locally relevant indicator systems for fisheries and for the ecosystem approach. Governments of developing countries must also first address the difficult questions of access to and tenure arrangements for their fisheries, as these are essential prerequisites for successful certification and product labeling. They will also need to legislate on the form and conduct of the post harvest chain and product control, as, in export markets, these are outside the control of the fishing communities. International agreement and clarity on trade, environmental (and health) standards affecting fisheries will augment national efforts. Advocacy coalitions that include governments, rather than extraterritorial imposition of labelling schemes, are required.

Paying for sustainable management will be costly, but it will go some way toward acknowledging the real environmental costs of fish harvesting. True pricing of fish in the world market will be of advantage to developing countries in trade terms. Sustainable fisheries management will be of advantage to all.

Foreword

The world over, fisheries stand out as resources that are difficult to manage or are poorly or little managed. The sector presents challenges, as both industrial and small-scale fisheries exist, often side-by-side, and governance initiatives must cater to the combined requirements of resource sustainability, and the economic and social issues which surround fishing.

Small-scale fisheries provide jobs and livelihoods for nearly 98 per cent of the world's 51 million fishers, and the lack of good governance in this sector threatens the sustainability of the resources and the rural livelihoods that are dependent upon them. A key driver of the overexploitation of the resource is that fish and seafood products remain highly profitable commodities that are extensively traded in the international markets. Fisheries trade today is being shaped by two very different trends. One is towards globalization and deregulation, while the other is towards complex processes of re-regulation, sometimes by governments but often also by way of private initiatives and voluntary regulation. One such measure is the introduction of ecolabelling of natural products, which aims to combat unsustainable harvesting practices by using market incentives (and the threat of market exclusion) to secure socially and environmentally acceptable harvesting behavior.

The WorldFish Center is an international organization contributing to the promotion of sustainable management of fisheries and coastal resources in order to enhance the well-being of present and future generations of poor people in the developing world. This study by WorldFish addresses the question: Can the market that drives globalization and international trade play an important role in sustaining fisheries resources? The impetus for the study came essentially from the partner countries, who are struggling with policy and implementation issues in this new area of management. The study discusses the merits and issues for ecolabelling as a potential tool in fisheries management globally – and examines the reasons for the reticence of some fisheries officers, particularly in developing countries, to become involved. The authors analyze the placement of the ecolabelling initiative in relation to the overall need for improvement in fisheries management, and examine and suggest how some of the reservations can be tested or dispelled. The role of developing country governments in laying the groundwork for the successful implementation of fisheries management is explored. It is suggested that broader, more flexible, coalitions between governments and all sorts of fisheries and environmental stakeholder organizations are required if developing countries are to enter international trade on an equitable footing and to capitalize on market trends.

It is hoped that this review will be of value to national fisheries management organizations, as well as international environmental and development donors, as they consider the use of market-driven interventions in the larger field of natural resource management.

Meryl Williams
Director General
WorldFish Center

1 The State of Marine Capture Fisheries

The declines in marine capture fisheries (FAO 1996; Williams 1996; Christy 1997; Pauly et al. 1998; Watson and Pauly 2001; ICLARM 2001; Bianchi et al. 2001; ICES 2002) result from iterative failures in policy formulation, implementation and enforcement affecting both developed and developing countries. In the developed countries, where scientific advice has been available, it has been undone by lack of precaution, lack of political will and perverse subsidies to the industry, which have enhanced rather than controlled fishing capacity. There are, of course, notable exceptions (e.g. selected fisheries in New Zealand, Australia and north America). But, at the time of writing, the effective collapse of cod stocks in the Irish sea, points to weaknesses in basing stock management on single-species evaluation methods, and to mismatches between the prescribed measures for management and their enforcement.

In developing countries, certainly in tropical developing countries, coastal and marine fisheries are characterized by multi-species fisheries fished with a range of gears and by commercial, municipal and community fishers. Some coastal fisheries (e.g. in the Pacific and Asia) are managed through the exercise of traditional fishing rights, but the majority have open access regimes, in which there is little ability to manage individual stocks or stock complexes, or to enforce zoning regulations between the different types of fishery. On the high seas, or with highly migratory or straddling stocks, the issue is the effective exercise of responsibility by individual or collaborating states. The challenges associated with monitoring and enforcement over wide areas complicate management regimes, and illegal, unreported and unregulated fishing is so widespread that it undermines global statistics (Bray 2000).

1.1 The Benefits and Damage from the Exploitation of Fisheries

Fish¹ is a healthy protein staple and its many types and products are widely traded on world markets. The trade in fish and seafood products is of particular importance to developing countries. In 2000, total world fish supply amounted to approximately 130 million tonnes, with approximately two thirds of this derived from marine and inland water capture fisheries, and one third being provided by aquaculture (FAO 2000). A large share of fish production enters international trade, with about 37 per cent (live weight equivalent) exported in 2000. Developing countries as a whole supply nearly 50 per cent of total exports in value terms. Lower income developing countries play an active part in this trade and, at present, account for almost 20 per cent of exports; this trade contributes substantially to their gross domestic product. In 2000, the total import bill for global trade in fisheries products was slightly in excess of US\$60 billion (FAO 2000). Developed countries account for over 80 per cent of total imports by value. Asia dominates both production and trade, supplying over 85 per cent of total world production and being responsible for US\$18 to 19 billion of exports.

Fisheries in developing countries have importance beyond the export dollar value. At the domestic level they also provide food security from common property resources for the poor; livelihoods; rural and urban nutrition; and have cultural values in some societies. Internationally proposed schemes for improving the sustainability of fisheries will have to accommodate countries' requirements in these areas and not just the export bottom line. The parlous state of fisheries in Asia (where coastal

¹Unless specified, the word "fish" in this article is taken in the generic sense to include finfish, and other seafood including crustacea and mollusks.

fisheries' biomasses are down to 8 to 12 per cent of unfished levels (ICLARM 2001), and where there are reductions in relative abundance of longer lived, high value species and a relative increase of lower priced species such as squid) threatens export and domestic, monetary and non-monetary benefits. Open access regimes and poor enforcement of management regulations have led to severe over-fishing, and structural problems mean that owners of craft and gear still make money while crews and artisanal fishers are confined to poverty. The potential profits from fishing are decreasing while the relative costs of fishing under the current biomass levels are increasing (ICLARM 2001).

In developing countries, such collapses, and the inability of scientific management regimes to make themselves understood to fishers at the local level, have led to a general lack of credibility for the scientific information about the conditions of fish stocks. The perceptions that fishers have regarding the condition of fisheries at the local level and what fisheries managers are telling them, are often far apart. Obtaining support for fisheries management

policies developed by researchers in fisheries research centers and government institutes is difficult. The credibility gap means that stock assessment results and models of management are not well received by fishers. Consequently, uptake of recommendations is limited and attempts at management tend to fail.

The urgency of the situation caused by the successive failures in management and the need to rebuild depleted fisheries globally (Ministry of Fisheries, Government of Iceland/FAO 2001; Pauly et al. 2002) were recognized in the final declaration of the World Summit for Sustainable Development (WSSD) held in Johannesburg in 2002 (WSSD 2002). The time is right, therefore, to examine the fundamental political failures in fisheries management and to rigorously test new alternatives and incentives. Improved fisheries management for sustainability of the resource could result, for instance, if confidence at the local level could be recaptured and if new incentives for fisheries to improve their state of health or methods of harvest were provided.

2 Factors in an Overall Approach for Better Management

Given the importance of fish and seafood products to so many, it is not surprising that various approaches to improving the management of fisheries are being explored.

One factor that is included in this approach relates to managerial responsibility. Formerly, the management of fisheries at the national level was generally based on a centralized governmental command and control structure. At more local levels, fisheries governance in developing countries has been exercised through traditional practices or through the emergence of user groups.

To try to increase agreement and compliance with management plans, governments have moved increasingly to the actual or experimental devolution of management authority. In recent years this has been accompanied by a large body of research on, and evaluation of, the relative efficiency of cooperative management regimes.

Another factor being considered relates to the method of stock assessment, which, in developed countries, has been science-based. It has become apparent that, in developing countries, a science-based approach to developing, explaining, and using indicators for fisheries management when dealing with the wider group of potential stakeholders is less appropriate.

A third major factor in fisheries management is that even sophisticated single-species management plans can be undone. This occurs when the fishing methods used have unwanted impacts on the wider ecosystem. Furthermore, irrespective of the fishery-specific plans, decisions and practices outside the fishing sector can affect the integrity of aquatic ecosystems and fisheries. In consequence, ecosystem approaches to fisheries management are being developed (FAO 1995; Ministry of Fisheries, Government of Iceland/FAO 2001), and the WSSD (WSSD 2002) has promoted solutions to fisheries in the wider concept of sustainable development.

A fourth management factor relates to the fact that the exploitation of renewable natural resources on a purely economic basis fails to pay the price of sustainability. This must be factored into future management plans and costs, so that the commodity will be traded at its true value. The idea that many failures in natural resources management are brought about by the lack of the internalization of environmental externalities has been cogently advanced (Panayotou 1993; Van Dieren 1995; Bawa and Gadgil 1997). This is particularly the case in fisheries where price is determined more by the buyers and less by the cost of fishing. The social costs of fishery resources are not factored in (Tokrisna 2000), and indeed few coastal states are willing to try and remedy the situation through the use of economic instruments, especially when acting alone and in response to short-term export demand. The sector may already be mining the fisheries resource of the poorer countries for the benefit of northern markets, and undervaluing the product. Viewed from global environmental and equity perspectives, this amounts to a comprehensive "fail/fail" situation.

The fifth factor in the approach to better fisheries management relates to the power of the market demand for fish and seafood products to induce fisheries' managers to comply with prescribed codes of practice.

It is in this respect that ecolabelling, which is a process of placing seals of approval on products that are deemed to have fewer negative impacts on the environment than functionally or competitively similar products, has emerged as an important issue in developing countries' fisheries. Such schemes appeal to enlightened self-interest; fishing in a sustainable manner will be rewarded. The opportunities that ecolabelling present to those developing country producers willing to meet the sustainability requirements are (i) increased value added to existing products; (ii) greater penetration into existing markets, and opportunities to increase

or maintain market share in a competitive environment; and (iii) improved avenues for attracting capital investment and joint ventures. Ecolabelling has thus been seen as a means of providing incentives to the fishing community, governments, international agencies and local authorities to improve the aspects of fisheries management for which they are responsible (Nordic Technical Working Group on Eco-labelling Criteria 2000).

However, governments, producers and civil society groups in developing countries have expressed concerns about ecolabelling. These concerns include: 1) the lack of both transparency and opportunity for participation in the development of product standards; 2) the potential use of ecolabels to protect domestic industries, restrict market access and erode the national competitiveness of those less able to meet or afford foreign labelling and certification standards; 3) fear of high compliance costs with transnational or foreign ecolabelling schemes; 4) institutional factors that may preclude developing countries from being sufficiently organized to institute effective, independent management schemes and achieve certifiable status; and 5) the potential for criteria for certification to influence the impact of the

schemes on countries with differing environmental and socio-economic conditions and interests – especially given the wide gaps in income and in environmental conditions between developed and developing countries.

The need to understand and clarify the link between ecolabelling and environmental sustainability calls for systematic study of the ecolabelling schemes and their impacts on producer and consumer countries. The credibility of ecolabelled products, assessment of process versus performance schemes, technical and financial assistance possibilities for developing countries, and trade-related issues, are all areas where substantial gains from research could be made.

This paper examines and updates the status of ecolabelling as an incentive-based mechanism for sustainable natural resource management. The feasibility and possible impacts of implementing ecolabelling and certification schemes for fisheries management in developing countries, particularly in Asia, is also discussed. There is also some analysis of the appropriate placement of ecolabelling schemes in relation to other current initiatives to make fisheries management sustainable.

3 What is Ecolabelling?

Ecolabelling was first recognized internationally at the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro. This type of certification, originally defined simply as “making relevant environmental information available to appropriate consumers” (USEPA 1993), is meant to provide consumers with the opportunity to express their environmental/ecological concerns through choice of products. Ecolabels are thus “seals of approval” given to products that are deemed to have fewer negative impacts on the environment than functionally or competitively similar products (Deere 1999). The consumers’ preferences are expected to result in price and/or market share differentials between ecolabelled products and those that either do not qualify to be ecolabelled or come from producers who do not seek to obtain such labelling. The label is obtained through a certification process based on a set of criteria. Potential price and/or market share differentials provide the economic incentive for firms to seek certification of their products (MRAG/IIED/Soil Association 1999).

3.1 The Different Types of Label

Ecolabels have been used for some time in national programs (e.g. the German “Blue Angel” label dating from 1977); as intergovernmental standards (including Codex Alimentarius Commission, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the European Union “green” label, the products of the International Standards Organization (ISO), the World Trade Organization (WTO) Committee on Trade and the Environment); as key elements of environmental initiatives of non-governmental organizations (NGOs) (such as Eco-UK, Forest Stewardship Council (FSC), Marine Stewardship Council (MSC), Scientific Certification Systems (SCS)); and industry-led initiatives such as IFOAM (the International Federation of Organic Agriculture Movements) (reviewed in Dawkins 1995; FAO 1998). The majority of these initiatives aim to certify products produced by energy – or environment-saving processes, or to set standards for these. Ecolabelling schemes are generally classified into three categories (see Box 1).

First party labelling schemes: these are established by individual companies based on their own product standards. The standards might be based on criteria related to the specific environmental issues known to informed consumers through the media or advertising. This form of ecolabelling can also be referred to as “self declaration”.

Second party labelling schemes: these are established by industry associations for their members’ products. The members set certification criteria, sometimes by drawing upon external expertise from academia and environmental organizations. Verification of compliance is achieved through international certification procedures within the industry, or through employment of external certifying companies.

Third party labelling schemes: these are usually established by an initiator (public or private) independent from the producers, distributors and sellers of the labelled products. Products supplied by organizations, or resources that are certified, are labelled to inform consumers that the product was produced in an “environmentally friendly” fashion. The label (seal) is typically licensed to a producer and may appear on, or accompany, a product derived from a certified fishery or producer. Producers are usually expected to track the “chain of custody” of their products in order to ensure that the products derived from the certified producer are in fact those so labelled.

Box 1: Categories of Ecolabelling Schemes (after Wessells et al. 2001, with fisheries taken as a generic example)

Certification is most credible to consumers and other stakeholders when supported by third party review. In this paper, the discussions of the Forestry Stewardship Council (FSC), the Marine Stewardship Council (MSC) and the Marine Aquarium Council (MAC) all concern third party labelling schemes. Industry-led certification schemes are discussed with reference to aquaculture certification (section 5.4.2). The ISO is the largest standard-setting body and its technical committee (TC 207) has helped develop principles and environmental standards (the so-called 14000 series – or revised as the 14020 environmental management series). There has, however, been some criticism that “in the design of some schemes either governments, some sectors of the industry or environmental interest groups have not had the opportunity to express their interests” (Deere 1999; FAO 1998). It is worth noting that the standards are largely process oriented and do not provide individual performance measures against which environmental changes could be estimated. While ISO 14000 series products have been used as background information in the development of criteria and certification processes for other products, they do not constitute internationally agreed environmental standards in their own right.

3.2 Developing Programs of Certification

Developing programs of certification typically involves: a) the development of principles and criteria; b) the development of guidelines for management and competent means for third party certification and life cycle control²; and c) effective promotion of the label.

In some cases, the object of certification is not the product *per se*; rather the object is the processes and production method (or PPM, see

section 5.1), such as harvesting, used in the development of the product. With certification of PPMs, the chain of custody of the product, from the site of the environmentally favorable harvesting through its life cycle to eventual sale, is critically important. The labelled product must be held distinguishable from similar but uncertified products in a reliable manner through its entire life cycle. This is particularly important in the transfer of live organisms (e.g. fish for the aquarium trade). The requirements for the post-harvest handling of ecolabelled products are in this sense similar to those for products that are labelled for other reasons, such as food safety. While there are successful examples of product certification schemes for fish (see Wallis, section 4, in Wessells et al. 2001) they tend to be for high value products, such as tuna, for which the final market price makes such schemes feasible. Part of the credibility of certifiers is their ability to demonstrably manage the chain of custody; for some commodities, such as timber products, this is quite difficult in certain markets (FAO 1998).

Elliot (2000) has developed a useful set of criteria to assess certification schemes (see Box 2) from a review of the common requirements given for such schemes in the literature. As discussed below, ecolabelling and certification of fisheries is relatively recent, and assessment by the Elliot criteria will be appropriate until such time as formal impact measures become applicable. However, ecolabelling of forest products was initiated in the 1980s, with the first scheme (the United States Smart Wood Program) introduced in 1990. It provides the most relevant precedent for ecolabelling in fisheries.

²Life cycle control (or life cycle analyses, LCAs), are assessments of sustainability that consider all phases of a product – production, processing, use and disposal.

- Credible to consumers
- Comprehensive [includes all types of (fisheries) and (fish) products]
- Objective and measurable
- Reliable (in terms of assessment results)
- Independent from parties with vested interests
- Voluntary in participation
- Equitable treatment, non-discriminatory in trade impact
- Acceptable to the involved parties
- Institutionally adapted to the local conditions
- Cost effective
- Transparent (to allow external judgment)
- Goal-oriented and effective in reaching objectives
- Practical and operational
- Applicable to all scales of operation

Box 2 : Criteria against which to judge the effectiveness of certification schemes (after Elliot 2000)

3.3 Some Key Outcomes from the Development of Forestry Certification

The history and development of forestry certification has been extensively reviewed – see for example Elliot (2000) and FAO (1998). However, over two decades of experience with forestry certification schemes (and 5 to 7 years of ecolabelling for forest products) has resulted in only a very small volume of forest products being covered by the schemes. The Forest Stewardship Council (FSC), a membership-based, non-governmental organization was formally established in 1994, with the objective of promoting such schemes. Initially the scope was restricted to tropical timber but this was subsequently expanded to include temperate and boreal forest products. As of November 2002, 462 forest management certificates had been issued, covering forests in 56 countries, with a total forest area of over 31 million hectares (FSC website, 2002). This breadth and depth of data allow us to draw some general observations on the requirements for success of ecolabelling in a renewable natural resource system.

Credibility, coverage and cost – The continuing growth of certification and ecolabelling schemes reflects the appeal of these mechanisms to both environmental and market imperatives. However,

the number and variety of such schemes for forestry and timber products may cause consumer confusion and affect the credibility of the processes generally. Although the desirability for common frameworks has been recognized, international efforts to achieve them have experienced difficulties often because existing schemes have taken a defensive stance vis-à-vis their model for certification and labelling. Clearly it would have been preferable to have globally agreed frameworks in place at an earlier stage.

Currently, regional and national schemes exist in most continents, particularly in north, central and south America and in Europe. The African Timber Organisation has pursued an intergovernmental, regional ecolabelling initiative in Africa, based on regional criteria and guidelines. Levels of responsiveness “to certification in general and appreciation of FSC in particular, are at low levels in Asian countries – a fact reflected in the insignificant FSC membership and lack of demand for FSC certification in the region” (FSC 2000). In Asia, ecolabelling initiatives are under way in Indonesia and Malaysia, with relatively minor areas certified in other countries. As up to 80 per cent of tropical timber is consumed in producing countries, and as a significant share of traded products are exported to markets where consumers are not, at present, very responsive to ecolabelling programs

(e.g. Japan and China), the ability of certification programs to improve management of tropical forests is expected to remain limited in the medium term, and restricted to countries having important markets in Europe and North America (FAO 1998).

Certification costs do not vary significantly with the scale of the company. As a result, certification costs are proportionally higher for small companies than for large ones. Factors that create difficulty in determining actual costs include uncertainty about the starting point of the activity to be certified, competition between certifiers, and difficulties in distinguishing external (system-related) and internal (management-related) costs. At the global and regional levels, the premiums for certified forest products are estimated in the range of 5 to 10 per cent (FAO 1998).

Indicators – The number of international initiatives, guidelines, principles and criteria for forestry certification provides scope for confusion between schemes and between national and local scales of application. International agencies such as CIFOR (the Center for International Forestry Research) have both reviewed and distilled the criteria and indicators (C & I) of different schemes, and have developed guidelines (taking into account the major initiatives) for developing, testing and selecting criteria for sustainable forest management at the level of the forest management unit. In general, the guidelines place heavy emphasis on: (i) legal frameworks for defining who has rights of access and use; (ii) the ability to finance forest management; (iii) specific biodiversity issues within the maintenance of ecosystem integrity; and (iv) the forest as a component of users' livelihoods and source of forest products. Recent developments in designing C & I for both natural forest systems and sustainable plantation management have been

slower than expected, partly because the C & I were thought by forest/plantation managers to be too theoretical and insufficiently tailored to their specific and practical needs. In the case of plantations, this has been overcome by adapting and linking an existing set of C & I with a code of practice for plantation management (Poulsen et al. 2001).

The role of governments in certification – Certification and ecolabelling are attempts to change the international agenda for environmental management, or at least increase the rate at which it is implemented. They are essentially, therefore, key components of a policy development process in which international agreements and instruments, governments, the environmental NGOs, forest communities, and the forest products industry all play significant roles. However, several international coalitions have built up in support of different points of view (Elliot 2000). One particular coalition, including international NGOs such as Greenpeace, Friends of the Earth and Worldwide Fund for Nature (WWF), are supportive of performance-based certification in general and the FSC in particular. Others have supported a management systems approach, in which the forest operations to be certified set their own performance standards after a stakeholder consultation process. Government acceptance, either active or induced, is obviously key to the ultimate success of certification globally³ as governments have ultimate responsibility for the resources of the nation state and those shared with others. However, the willingness and capacity of governments to join in and support such schemes varies with their point of view, with the state of development of the country in question, and with the degree of government involvement in the sector.

Learning by doing – It is also clear that the relative

³ "The panel accepted that Governments have a critical role in promoting effective sustainable forest management systems. However, because certification has developed thus far (1997) as a voluntary private initiative, different views expressed on the roles of Governments and intergovernmental institutions in the development or regulation of certification systems require further clarification. In considering possible roles for governments, bearing in mind the fact that certification is a market driven process, distinctions should be made between the roles of governments as regulators, as promoters of public policy and, in some countries, as forest owners. Governments, however, have a role in encouraging transparency, full participation of interested parties, non-discrimination and open access to voluntary certification schemes." United Nations Economic and Social Council (UNESCO). 1997. Report of the Fourth Session of the Ad hoc Intergovernmental Panel on Forests (IPF), Commission on Sustainable Development, Report E/CN.17/1997/12. United Nations, New York, NY.

advancement of certification in some countries would not have resulted without significant coalitions existing and attempting to put such schemes in place. Some schemes have been partial implementation exercises and have delivered uncertain broader impacts on forest management in the countries concerned. In Indonesia, for example, certification alone is unlikely to have an impact on deforestation in the country (Elliot 2000). However, generally, the process of developing certification standards and other elements of the program offers opportunities for policy-oriented learning. Elliot (*op. cit.*) argues that, without this continued learning, the impact of certification on forest management is likely to be localized and limited. The future of certification, therefore, depends on providing suitable conditions for learning to occur.

3.4 The Marine Stewardship Council

The major initiative in fisheries ecolabelling has been the establishment of the **Marine Stewardship Council** (MSC) in 1997 (see Box 3). The MSC was initially formed by the WWF (following its experience with the operation of the similar Forestry Stewardship Council) and the company Unilever, the world's largest buyer of seafood (Sultan 1998). This alliance between an environmental NGO and a commercial company involved in fisheries trade illustrates the emerging tendency, in a world where civil society groups (made up of the community and, possibly, NGOs) and multinational companies are prominent and influential, for environmental policy initiatives to be set outside the government sector (Elliot 2000). The MSC initiative was given impetus by the declaration that Unilever, from 2005, would buy only fisheries products from sustainable sources. Although operating independently since 1999 – neither founding organization sits on the Board of the MSC or provides core funding – the *genesis* of the MSC is a factor in how it is perceived in developed and developing countries, irrespective

of the merits of its activities (Braaten 1999; Kurien 2000; May 2000).

The Western Australian rock lobster fishery is Australia's most valuable single species fishery and a major export commodity (MRAG/IIED/Soil Association 2000), and the Alaskan salmon and New Zealand hoki fisheries are also major, export-targeted fisheries. The other certified fisheries are relatively small, with modest export opportunities. The driving force for these fisheries obtaining certification was to secure and increase the market share of niche market commodities. Certification was sought in general on the basis of existing management regimes, rather than to improve fisheries management *per se* (see discussion of the hoki fishery below).

3.5 The Example of the Hoki Fishery Certification

It is informative to review the public reports of the hoki fishery certification⁴, as they illustrate the implementation of the MSC review process. However, this fishery provides a particular example of how effective national fisheries management helps achieve certification (Box 5).

New Zealand is, of course, a developed, island nation sitting in temperate and sub-temperate latitudes. It has recognized its dependence upon fisheries and coastal and marine affairs and has reduced the potential conflicts and complexity of its fisheries by reducing, over time, the number of fishing boats owned by foreign states. "Hoki" is the local name for *Macruronus novaezelandiae*, also known as blue grenadier, a member of the Merluccid hake family (FishBase 2002). It is a highly commercial species, with the Total Allowable Commercial Catch (TACC) set at 200,000 tonnes (for the 2001-fishing season). Two major stocks are recognized around New Zealand but, although there are environmental growth rate differences, they are considered genetically uniform. Stocks are

⁴In this case the certifying agency was SGS (Societe Generale de Surveillance): SGS Public Summary Report (of New Zealand's Commercial Hoki Fishery) pp 70, and Hoki scoring guideline V2, p. 25, Document MAD-06, Dated 12 March 2001: see www.MSC.org.

The MSC is "seeking to harness consumer purchasing power to generate change and promote environmental stewardship of the world's most important renewable resource" – i.e. fish. The MSC has developed an environmental standard for sustainable and well-managed fisheries. It uses a product label to reward environmentally responsible fisheries management and practices. There are three principles to the MSC standard, supported by a number of criteria in each case (see Annex and the MSC Web site www.msc.org). The principles consider the condition of the stock, the impact of the fishery on the marine ecosystem, and the fishery management systems. A certification methodology was developed and published in March 2001. To determine performance and evaluate a fishery against the principles and criteria, third party assessors (certifiers) follow a substantial process, and apply a standard scoring process. Public Certification reports are also posted on the MSC Website. To date (November 2002) six fisheries have been certified (see Box 4a), a further eight are undergoing full assessment for certification (Box 4b) and approximately 20 fisheries are at various other early stages of assessment. A number of developing country fisheries have also expressed interest in obtaining certification (Box 4c).

"To accomplish its objectives, the MSC proposed a new approach to change the incentive structure so that benefits accrue to the fishers, fish processors, traders, retailers and consumers in adopting a more responsible and sustainable approach to fisheries exploitation. At the center of the MSC is a set of principles and criteria for sustainable fishing which is used in an independent assessment as a standard by which an independent assessment team evaluates a fishery.

"Using its expertise, the assessment team develops a set of performance indicators to be consistent with the intent and extent of the MSC principles and criteria.

"The MSC methodology for fishery evaluations utilises a decision support process known as AHP (Analytical Hierarchy Process) to assist the team weight and score sets of performance indicators and criteria within each individual principle. Using this method, compliance with each MSC principle is evaluated independently. Each principle is considered independent of the others and, to be certified, a fishery must obtain a rating consistent with meeting compliance with the MSC principles and criteria. If the fishery does not meet compliance on any one of the three MSC principles, the fishery is not recommended for certification."

During assessment of the fishery, and evaluation of the fishery management, the assessors can draw the attention of the management entity to requirements through Corrective Action Requests or CARs, which are defined as:

Major CARs, which must be addressed and re-assessed before certification can proceed. They indicate a rating under *Pass* for one of the MSC principles or a rating of under *Minimum* for one of the criteria;

Minor CARs, which do not preclude certification, but should be preferably addressed and will be checked at the next surveillance visit. A minor CAR indicates a rating between *Minimum* and *Pass* for one of the MSC Criteria and under *Pass* for one of the performance indicators.

The MSC is trying to extend the number of certifiers globally.

Box 3 : The Marine Stewardship Council is an independent, global, non-profit organization based in the UK

- Alaska Salmon in the US
- Burry Inlet Cockles in South Wales, UK
- Hoki in New Zealand
- South West Mackerel Hand Line Fishery in the UK (a component of the north-east Atlantic mackerel stock)
- Thames Herring in the UK
- Western Australia Rock Lobster in Australia

Box 4a : MSC certified fisheries by end November 2002

- Alaska Pollock Fishery in the US
- Banco Chinchorro Atoll Spiny Lobster Fishery in Mexico (certification has been discontinued)
- British Columbia Salmon in Canada
- Mexican Baja California Spiny Lobster in Mexico
- North Sea Herring Fishery (under the auspices of the pelagic Freezer-Trawler Association)
- Hake in South Africa
- South Georgia Toothfish in South Georgia and the South Sandwich Islands (administered by the UK)
- Loch Torridon *Nephrops* Fishery in Scotland, UK

Box 4b : Fisheries undergoing assessment as of end November 2002 (as per the MSC), the WWF (*op. cit.*) include some additional small-scale fisheries not included in the MSC list

- Galapagos Lobster and Mixed Fishery in Ecuador
- Ceara Lobster Fishery in Brazil
- the Artisanal Hake Fishery in Chile
- the Pha Nga Bay Mixed Fishery in Thailand
- the Sulu Sea Blue Crab Fishery in the Philippines

Box 4c : Fisheries from Developing Countries currently seeking MSC certification

New Zealand introduced a quota management system in 1986. This system controls the total commercial catch from all the main fish stocks found within New Zealand's 200 nautical mile exclusive economic zone.

There are numerous statutes governing the conduct of fisheries and other uses of New Zealand's coastal waters. Chief amongst these is the New Zealand Fisheries Act of 1996, which encompasses the precautionary principle and the concept of ecosystem effects of fishing. It also recognizes existing statutes on Maori fishing rights and the allocation of fisheries resources to a representative body of Maori.

In order to meet the requirements of the assessors, many of the responses of the HFMC referenced existing fisheries legislation in New Zealand.

The Government decides annually on the total allowable catch (TAC) for each fish stock on the basis of scientific information and consultation. For the hoki fishery, such stock assessments are carried out with the help of independent trawl surveys and acoustic soundings.

The commercial stocks have been regularly assessed since 1986; there is good background knowledge and there are extant models of the fishery. The government conducts or commissions such assessments and charges industry for the costs.

Customary (non-commercial Maori) and recreational fishing are not directly governed by the Quota Management System (QMS), but are regulated using input controls. Both customary and recreational catch levels are estimated before setting the TACC (total allowable commercial catch) for each quota species. This is the total quantity of each fish stock that the commercial fishing industry can catch that year. The TACC for each fishery comprises individual transferable quota (ITQs).

Fishing and fishing boats are monitored by satellite and by an industry-based program of observers. Occasional passage of boats and planes of the New Zealand Force help monitoring and compliance⁵.

Box 5 : Major advantages conferred by New Zealand's fisheries management structure on the process of certification (Sources: Ministry of Fisheries, New Zealand 2002a; Straker et al. 2002)

⁵It would be fair to say that New Zealand's fisheries are the envy of many OECD countries: New Zealand claims the ratio of net government expenditure on fisheries management to the annual landed value of the fishery resource to be 4 per cent, compared with an OECD country average of 17 per cent for those with credible management regimes (Ministry of Fisheries, New Zealand, 2002b).

fished by bottom and mid-water trawls. Such industrial fishing boats are largely in excess of 42 meters. There is relatively little by-catch, and incidental by-catch of sea birds and such icon species as seals are well documented.

Few developing countries can presently hope to match such management sophistication (with the exception perhaps of those conducting tuna fisheries through regional consortia and agreements). New Zealand has taken steps to define access and property rights, to accommodate minority communities with traditional rights into national schemes for entry and allocation, and has in place legislation to commence the adoption of an ecosystem approach to fisheries management. Nevertheless, the weaknesses detected in the hoki fishery management by the certification assessors⁶ focus on the lack of an environmental impact assessment, including ecosystem impacts. The weaknesses were identified in several CARs (or Corrective Action Requests in the terminology of the MSC - see Box 3) and, while they did not prevent certification, they did require the Hoki Fishery Management Company (HFMC) to have revised management plans by the time of a follow-up audit conducted 16 months after certification. The audit led to some parts of the revised plan being accepted, and additional minor CARs and review dates being developed. The certificate of sustainable fisheries has a five-year lifetime.

The minor CARs directed to the fishery related largely to the environmental/ecosystem effects of fishing, the need for better recognition of spatial structure rather than merely biomass estimates in management, and effective implementation of a comprehensive management system.

There was de facto acknowledgement that the effects of bottom trawling in the relevant ecosystems are insufficiently known: "Information is not sufficient on the distribution of habitats, major assemblage types and the natural functions and trophic relationships among species in the midwater and benthic ecosystems where the fishery operates". This highlights the need for a transfer of even one of the best-monitored fisheries from a single stock approach to an ecosystem based approach, as well as the potential for ecolabelling and certification to be a force in that direction. However, it could be argued that the country was already embarked on such a course, as such shifts are presaged in the New Zealand Fisheries Act. (Similar efforts are being made in some other countries, see section 6.2). New Zealand is currently extending the quota system to other species, and seeking to ascertain better the effects on non-commercial and icon species and to increase stakeholder accountability (Ministry of Fisheries, New Zealand 2002b). Thus, the certification process seems to have raised awareness of the practicalities of the new paradigm, and hastened the engagement of the commercial fishing industry in these approaches.

In the light of the challenges faced by small-scale, multi-species fisheries in tropical, developing countries, it might seem perverse to dwell on the challenges faced by a well-managed fishery in a developed country when gaining certification. So that certification as currently formulated is not simply seen as a confirmation of the status quo in fisheries, it is necessary to examine more widely the equity, social and ecological correlates of the potential introduction of fisheries certification schemes, particularly in developing countries.

⁶MSC Fishery Surveillance Report (of the New Zealand Commercial Hoki Fishery), Report No. MAD-43, p. 9, dated 22nd July 2002: see www.MSC.org.

4 Certification Applied to Developing Country Fisheries

The MSC principles and criteria have been developed generally (based on the Food and Agriculture Organization of the United Nations (FAO) Code of Conduct for Responsible Fisheries). They could, therefore, be interpreted more as a fundamental statement of what sustainable fisheries should be, with the expectation that the individual nature of fisheries can be accommodated through engaging in the process of certification (and operationalizing the standard in terms of performance indicators and scoring goalposts) irrespective of the scale of the fishery and region. However, the differences between the industrial off-shore fishing of single species in higher latitudes, and the fisheries of tropical, developing countries are substantial. Small-scale fisheries in the tropics are characterized by open access and overlapping multi-species fisheries, fishing with numerous gears, and using a multitude of landing sites. The range of operation, the sequential operation between fisher groups, and the subsistence orientation of some aspects of the production, differ markedly from industrial fisheries with which they coexist and compete (Panayotou 1982). The coexistence of commercial, municipal and artisanal fishers, and informal distribution and marketing of the catch for some fisheries, mean that current catches are often not properly monitored and reported. These differences in complexity, in current regulation (or its lack), and in the types of direct social dependence of fishers on the resource, have led those directly involved with small-scale fisheries to question whether ecolabelling certification in general, and the principles and criteria espoused by the MSC initiative in particular, can be meaningfully applied to these fisheries. If the complexity, or other constraints, inherent in developing country fisheries prevent such fisheries from effectively meeting the standards, then ecolabelling will be a marketing advantage open to relatively few fisheries globally. If certification and ecolabelling cannot really serve the needs of the small-scale fisher they cannot be extended to the global improvement of fisheries management.

4.1 Reactions to Ecolabelling and the MSC Initiative

The critiques of ecolabelling and the MSC initiative, as currently formulated, focus in five general areas: a) legitimacy and credibility; b) a mismatch between certification requirements and the reality of tropical small-scale fisheries; c) potential distortions to existing practices and livelihoods; d) equity and feasibility; and e) perceived barriers to trade.

4.1.1 Legitimacy and Credibility

The MSC initiative is the only third party certification scheme for ecolabelling sustainably managed marine fisheries. As with any initiative, timing, context and the perceptions of stakeholders affect whether or not good ideas are translated into new paradigms, practices and results. To be a truly global force in the improved sustainability of fisheries it must apply in some form or other to the different types of fisheries around the world. Developing countries are the biggest exporters of fish, largely to northern markets; their fisheries also meet national and local needs for food security and livelihood. The inclusivity of the group that originally framed the MSC principles and criteria, and the group's ability to speak for developing country fishers and fisheries have been questioned (Mathew 2000, Kurien 2000). Certainly, the criteria and principles as initially formulated, although scientifically attractive, are not easily applied to the diversity of fisheries in developing countries. Indeed, Asian countries generally have reacted negatively to the MSC initiative on this basis, and on the grounds of the legitimacy of an NGO dictating terms to national governments that have sovereignty over their resources (SEAFDEC 2001). The early liaison with Unilever has raised fears that the initiative was motivated by the requirements of the retail trade, and not by true consumer pressure for eco-friendly produce – especially given that the latter has yet to be mobilized in some countries

(Wessells et al. 2001). Although Unilever is not still represented on the Board of the MSC (May 2000), this perception still exists in developing countries (Kurien 2000). While in the case of forestry, the catalytic role of NGOs in setting environmental policy has been noted, the public perceptions of the NGO partner, WWF, and its activities in areas unrelated to fisheries, have caused collateral mistrust of the certification initiative (for example, in Scandinavia, Braaten 1999). For these concerns to be assuaged, implementation of the certification scheme must be seen to result in better fisheries management more broadly. The scheme must take on issues of social equity, and not simply increase the price of high valued products in distant markets.

4.1.2 The Mismatch between Certification Requirements and the Reality of Tropical Small-Scale Fisheries

If the certification of fisheries in developed countries accomplished to date (see section 3.4) was itself a trial of feasibility of the certification concept, it is now pertinent to ask about the feasibility and consequences of extending this experience to tropical, developing country fisheries. Even for single species fisheries, substantial scientific effort and financial outlay are required for adequate stock assessment complying with the MSC guidelines. Compliance with catch reporting guidelines alone would be hard to develop, maintain and finance in many developing countries. If only export-driven fisheries are likely to meet these costs, the MSC initiative is unlikely to influence the bulk of fisheries in Asia, which fish for domestic markets. Stock-based assessment, with heavy data requirements, cannot be the only basis for assessing and determining labels. More indicator-based assessment tools will be needed and will have to be developed for these purposes. The MSC has commissioned expert advice to help develop processes of assessment for data-deficient fisheries (P. Degnbol, pers. comm.).

Certification of fisheries may help improve awareness and marketability of the product but it will not be, and is not claimed to be (Schmidt 1998), the only requirement for improved fisheries

management. "Without addressing the issues of access or property rights to the coastal seas, product labels alone will be non-starters for achieving sustainability" (Kurien 2000). Logically, at the present time, certification of fisheries is limited to fisheries "that can" (Braaten 1999). National governments must take the steps to control access and establish shared management in order to make certification feasible for other fisheries. Means must be found to license the different user groups, including artisanal fishers, who exploit the fishery. Granting certification to one group in a fishery could potentially disenfranchise the poorer partners. Furthermore, if this were seen to be done under the pressure of external forces, it could undermine government initiatives. Following deliberations amongst key Southeast Asian nations (SEAFDEC 2002a), member governments were urged to "anticipate and address" the potential impacts of ecolabelling of ASEAN fish and fishery products. It was suggested that regional guidelines and criteria be developed, and a technical forum relating to implementation, assessment and certification processes be considered (SEAFDEC 2002b). Although developing countries are not expected to develop the level of monitoring that has been developed through government legislation for the hoki fishery in New Zealand, the existence of a monitoring, control and surveillance (MCS) system appropriate to the nature and scale of the fishery with tenure arrangements, are essential pre-requisites for the award of an ecolabel (Wessells et al. 2001).

In recognition of these issues, the WWF is attempting to test certification methodologies for small-scale fisheries at a number of sites. The approach, which aims to maximize the use of local knowledge in the certification process, depends on partnerships with fishers and other stakeholders to assess the state of the fishery. An earlier critique suggested that there had been only moderate initial success (MRAG/IIED/Soil Association 2000). In its account of the project, the WWF report (WWF 2002) identifies two dilemmas – the data dilemma and the management dilemma. The data dilemma, both for the MSC certification process and for fisheries management in general, is how to obtain the scientific information required to assess the

biological stock of the species in question, when community fisheries deal in traditional, local knowledge based on areas. In the case of the blue crab fishery, Sulu Sea, Philippines, there have been problems with conducting a full stock assessment. While the stock is perceived to be unique, the genetic analysis, which would have determined uniqueness, was too costly for the community to have conducted. The same dilemma extends to management, as community-based fisheries tend to rely on local traditional knowledge in their management rather than on conventional western scientific methods. Ways need to be found to combine the two knowledge systems productively. This is unlikely to happen immediately, as practical experience will be needed to understand how well traditional measures can deal with both stock-related and ecosystem expectations of management. Improved explanations will also have to be included in the packaging of science-based indicators to encourage their adoption. This will require both time and money and the sharing of best practices.

4.1.3 Potential Distortions of Existing Practices and Livelihoods

National fisheries management plans are developed to address a number of goals. These include ensuring sustainability of the resource, contributing to national food security and to employment, livelihoods and earning foreign exchange through exports. The ecolabelling approach, by focusing on the perceived international demand for properly managed fisheries, and processing, moves incentives and pressures for compliance into the international arena.

Although the declared aim is to certify fisheries and not single species, there are technical and market issues to consider for multi-species fisheries if ecolabelling becomes successful. The multi-species, multi-gear nature of tropical fisheries, and the need to meet ecosystem monitoring requirements, make it necessary to develop life history and stock assessment knowledge and monitoring capacity for more than one species, even when only one (high value) component of the fishery is targeted for export. This is a daunting challenge in terms of

finance and monitoring. If the fishery, rather than a species within it, is the unit of certification, the additional costs of certification potentially increase the costs of fishing for all species. If a price premium can be charged in the export market, the high value exported component of the fishery will potentially recoup some of the outlay. However, the impact on the domestic market price of other species consumed locally is yet to be determined. The market for virtually every seafood product has its own subtleties based on taste and culture, traditional availability, income class of the consumers, etc. Currently, domestic markets in developing countries are more sensitive to price than to environmental considerations. They may not support price premiums, or only certain sectors of the domestic market would show willingness or capacity to pay if costs were translated into increased prices. This could exacerbate trends by which products (in some cases the “national fish” e.g. kurau in Malaysia, tuna in the southern Philippines) become unaffordable in the local market or to some sectors of consumers.

Conversely, the existence of a price differential may bias fishing practices and effort and diminish the sustainability of the fishery. This is the theoretical outcome expected of certification and ecolabelling in open-access or sub-optimally managed fisheries (Gudmundsson and Wessels 2000). For ecolabelling to function in support of sustainability, a realistic price premium, efficient, limited-access management and monitoring of the key biological factors have to be developed in concert (Gudmundsson and Wessels 2000).

It has been argued that where developing countries are exporting single, high value species (such as shrimp and tuna) caught through specific fisheries (or as a result of aquaculture in the case of shrimp), there will be no significant interaction with the domestic market (MRAG/IIED/Soil Association 1999). This assertion needs to be validated in order to examine both exclusion effects on other fisheries, and issues related to by-catch (which is either discarded or, in many developing countries and given current price differentials, productively utilized). There would seem to be a need to monitor

these trends and to assess the extent to which export income, or returns to those granted the prerogative to certify their products, offsets the possible limitation of choice in domestic markets. Research into the fate and marketability of those species in multi-species fisheries for which there is no export market is therefore required.

The supervision of the chain of custody will also be problematic in small-scale fisheries in developing countries because many different households or groups are often concerned with post-harvest processing. To reach export markets, the product has to be sold into marketing chains within which small-scale fishers have relatively little influence on price transmission. If certification did have the predicted effects in markets it would be likely to reward middlemen and the post-harvest chain of custody, but not necessarily the fisher (Kurien 2000; SEAFDEC 2001). There is also potential for sales to the export market to threaten the nutritional security at the place of origin, and to displace women or local groups who find employment and play a central role in local fish marketing (Kurien 2000).

Further, should ecolabelling become successful, the development of large price differentials between products may actually encourage the persistence of markets for unsustainably fished products. This could be referred to as the need to create “non-leaky” consumer demand for ecolabelled products. In the case, for instance, of marine aquarium fish and the provision of fish to the live reef food fish trade, multiple supplying countries and developed, developing and transitional country markets for these products complicate the implementation of reliable certification schemes (Chan 2000). As long as alternative markets exist for some of these products, even if the second, local market is less lucrative than the certified avenue, it is likely that poor fishers will continue to exploit the resources, perhaps even increasing effort, legally or illegally, to make up for the lower market price in this

non-certified market⁷. Extensive market demand studies, and continuing environmental education, will be needed in all countries.

4.1.4 Equity and Feasibility

Equity is an issue in two ways. First, the criteria and indicators set for certification should be equally achievable by both developed and developing country fisheries. If this is impractical, more flexible approaches to certification will be required in order to level the playing field and to lower the apprehension of developing countries that certification is just another potential barrier to trade (c.f. the hazard analysis critical control point [HACCP] legislation which has, through the stringent requirements of the consumer countries, in some cases limited the opportunities for producing countries to reach northern markets).

The second way in which equity is an issue relates to the inclusion of fishers in management units. This is likely to be difficult because most quota-run systems are dominated by the richest stakeholders (but see the example of the New Zealand national fisheries legislation [3.5 above], which has negotiated provisions for the inclusion of minority groups). Multi-species fisheries are likely to become the target of international pressure for licensing to ensure that the methods of production are commensurate with sustainable fisheries management, rather than the commercial utilization of the highest value species. In this case, artisanal fishers, who produce around 40 per cent of the catch in these fisheries in developing countries, must be adequately recognized and compensated. Information is required on who benefits from these schemes in order to establish equitable principles for legitimate participants in terms of a) access to licensing schemes, and b) the sale of products.

Finally, there is the question of whether or not, at the moment, it is feasible to enact and enforce

⁷Unsustainable, illegal fishing already takes place in some regions and fisheries irrespective of ecolabelling and certification issues. For an alternative fishing response under more coherent market conditions see section 5.5.

the certification of communities or their fishing methods in small, developing countries, where even current catches are not properly evaluated and recorded. A too rapid adoption of the ecolabelling approach might lead to “certified” products actually being “labelled as certified” through inadequate or illegal practices. There is clearly a need to monitor and to demonstrate through research whether or not, as countries move to adopt the FAO Code of Conduct for Responsible Fisheries at the national level, market-based certification can actually change behavior at the fishery level.

Lack of financial (Mathew 2000) and institutional capacity (Kuperan and Gardiner 2000) will hinder the ability of developing country fishing management units to undertake certification, or to engage the necessary scientific expertise. Research is still required on the feasibility of community-based fisheries’ certification methods and protocols (Kuperan et al. 2002; and see section 6.3). Embarking on certification without a clear signal that the market will bear the ecolabel price could be foolhardy (Kurien, 2000; and see below). Certification of whole fisheries will encompass commercial and artisanal users, and the plan must provide both groups with incentives, and rewards for good practice. The MSC accords no special status or recognition to any particular type of management system, simply assessing de facto the efficiency of the existing system to manage a fishery sustainably. Furthermore, the MSC standard (under principle 3) requires that the legal and customary rights and long-term interests of those dependent on the fishery for their livelihoods must be observed. However, if certification is too costly for developing country fisheries, cost-effective alternatives for products to reach markets could be evaluated. Suggested alternatives have included fair trade labelling schemes – which ensure that artisanal fishers’ livelihoods are maintained and the fishers are rewarded for non-destructive, environmentally selective fishing methods; labels which promote traditional fishing methods (as these are generally considered to be less damaging than industrial methods); and labels of geographic origin (Kurien 2000; Mathew 2000). Although attractive in essence, the practicalities for such schemes still have to be

developed, and they run the risk of attracting similar criticisms of arbitrariness and potential trade infringements (see Deere, page 64 in Wessells et al. 2001 and section 5.1).

The fact that the responsiveness of consumers to ecolabelling schemes varies greatly among regions and countries is likely to create an incentive to direct products from certified fisheries to eco-sensitive markets, and products from uncertified fisheries or uncertifiable chains of custody to eco-insensitive markets. Most of the future expansion in demand for fish and fishery products is expected to arise in Asia, Latin America and Africa, where consumers are presently not very responsive to ecolabelling of fish and fishery products. Therefore, it appears that, at least in the medium-term, the extent to which ecolabelling can serve as a tool for achieving sustainable fisheries on an international scale may be limited (MRAG/IIED/Soil Association, 1999). While lack of consumer responsiveness may slow the spread of environmental certification, other potential drivers of certification might be the need to attract international investment for fisheries development, or the overt use of certification by governments to reward conservation efforts.

4.1.5 Perceived Barriers to Trade

If the perception that certification will reward well-managed fisheries regimes without making any global impact on fisheries gains currency (Mathew 2000), then mistrust about the economic motivation for ecolabelling will be raised in developing countries. This will add to the general anxiety about the globalization of trade and the gradual move away from a more certain environment for trading – in which tariffs and quotas are specified and clear to all traders in advance – to a situation where a product will be accepted or rejected for entry to a country on the basis of standards and labels, for which the standards are determined by the importer. The determination of the standards, and the imposition of the label, is often in the hands of the more developed countries. This can lead to more uncertainty in trade for marine products for developing countries. The difficulties in establishing and applying impartial and transparent criteria for

granting an ecolabel; problems of ownership and control of the labelling schemes; the potential for ecolabels to be used as a non-tariff barrier; and the disproportionate rewards to those responsible for the post-harvest production and export to the detriment of the catching sector have been widely expressed in debates on ecolabelling (see Deere 1999; SEAFDEC 2001). Dawkins (1995) recommends that criteria for certification be broadened both to include social criteria and the identification of compatible financing vehicles – which would better accord with the wider criteria adopted in forestry certification (see sections 3.3 and 4.1.2 above). She cautions that the ultimate size of the demand for ecolabelled products is a factor in meeting social criteria in the supplying countries. Should international markets remain relatively small, and be supplied through a small number of retail chains, the supply is more likely to be subject to monopolistic practices at the expense of small producers in exporting countries (and see 1998⁸). Life cycle analysis should ensure reliability for consumers and for producers in exporting countries.

4.2 International Research Support for the Improvement and Extension of Labelling Schemes

On more than one occasion the FAO has convened groups to evaluate the utility of product certification and ecolabelling in fisheries. The expert groups have remained divided (reported in Deere 1999; FAO 1998), although the reports provide good case histories of the pros and cons of ecolabelling, and demonstrate that chain of command and product labelling schemes are feasible when the stakes are high – e.g. for tuna and Patagonian tooth fish (see section 4 in Wessells et al. 2001). Governments and fisheries representatives in Asia have expressed reservations that ecolabelling can quickly be made feasible and equitable for developing countries. Substantial bodies of research in all categories (biological, ecological, economic, social and policy) are required to move the debate from what ecolabelling cannot do, to what it might productively do in the future as part of a general set of integrated measures (see section 6).

Hamstrung by titles, the international community should seek to progress the debate (Deere 1999) through a focus on standards of all types that will enhance good practice and trade.

⁸See also the anonymous summary, page viii. A roadmap for the future for fisheries and conservation, M.J. Williams (ed.) 1998. International Center for Living Aquatic Resources Management, Philippines and the ICUN - the World Conservation Union, Switzerland. ICLARM Conf. Proc. 56, 58p.

5 Ecolabelling and International Trade

5.1 Technical Barriers to Trade

The major developing country concerns about environmental labels acting as barriers to trade have led to several analyses of major international declarations governing trade and the environment, including relevant WTO agreements and the General Agreement on Tariffs and Trade (GATT), as they may affect labelled or certified products and processes. This subject has been comprehensively reviewed (see Deere, p. 58-65 in Wessells et al. 2001 and references therein, and Deere 1999) and the salient points are given in Box 6.

Thus ecolabelling schemes that are mandated by governments come clearly within the Technical Barriers to Trade's (TBT) rules on technical regulations and other relevant rules of the WTO. In contrast, voluntary ecolabelling schemes do not appear to contravene existing multilateral trade rules. But there is a caveat relating to the process and production methods (PPMs) for a product. PPMs include processes of production for which certification might be sought because they lead to the development of a product which is less environmentally polluting (called product-related PPMs). However, PPMs can also include a process or method, such as the harvesting of natural resources that might have positive or negative effects on the environment in the production phase (these are distinguished as non-product related PPMs). These production externalities do not affect product characterization (i.e. the consumer could not distinguish fish produced by sustainable or unsustainable harvesting methods). Rather, the ecolabels invite consumers to discriminate, not on the basis of product characteristics, but on the (unseen) means of production. The power of countries to make distinctions based on standards

and regulations pertaining to PPMs, which do not show up in the physical characteristics of the product, is currently hotly contested (Deere, *op. cit.*, and discussed below in section 5.2). While open discussion of this point would obviously be preferable, some governments have been reluctant to engage in this debate on environmental PPMs because they fear that further social considerations (based for example on labor standards and human rights) may further enhance discrimination. This lack of clarity is an issue, as, in the case of fisheries, PPM-based measures are clearly central to better conservation and environmental management (Downes and van Dyke 1998).

5.2 Conflicts over Trade, Environment and Seafood Labels

There has been a series of judgments by the WTO on the ability of nations to impose environmental conditions or labels on internationally traded seafood products. Although none involves certification in the sense advanced by the MSC (above), they do shed light on the evolving treatment by the WTO of aspects of labelling of products from the fisheries sector.

5.2.1 Dolphin-Free Tuna

The two tuna-dolphin disputes (WTO 1991 and 1994) collectively represent one of the major trade-and-the-environment challenges to be faced by the WTO⁹. They arose from the attempts of the US to impose import embargos for yellow fin tuna on countries that fish for tuna, particularly in the tuna fisheries of the Eastern Tropical Pacific, using purse seines in which there was substantial dolphin by-catch. The first challenge was brought by Mexico, as a primary tuna fishing nation and producer

⁹There have been many analyses of the tuna-dolphin disputes. See Downes and Van Dyke (1998) for the conflict in relation to the wider trade law and sustainable fisheries; and Kingsbury (1994), for an account that includes implications for the potential restructuring of international law to accommodate such trade-environment issues.

Principle 12 of the Rio Declaration on Environment and Development – “Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.”

The WTO Agreement, which directly addresses ecolabelling, is the Agreement on Technical Barriers to Trade (TBT).

The WTO Secretariat notes that “well designed eco-labelling programs can be effective instruments of environmental policy” so long as the key requirement of non-discrimination between foreign and domestic products is honored (www.wto.org/wto/environ/eco.html).

TBT differentiates “technical regulations” (mandatory requirements for products or related processes and production methods PPMs) and “standards” (voluntary requirements for products or PPMs).

The rules of the TBT agreement, including its Code of Good Practice for the Preparation, Adoption and Application of Standards (the Code of Good Practice), prohibit both technical regulations and standards from discriminating between domestic products and foreign products that are alike (the national treatment principle) and between “like products” from different WTO Members (the “most-favored-nation” principle).

In the case of technical regulations, if a regulation is applied in accordance with a relevant international standard, it is presumed not to create an unnecessary obstacle to trade.

Members must ensure that standardizing schemes operated at the national and international level comply with the Code of Good Practice of the TBT.

The Code of Good Practice requires a standardizing body to make reasonable efforts to harmonize standards at the international level.

The TBT has several provisions calling on countries to ensure transparency in the development and application of standards. It also calls on developed countries to recognize the difficulties that developing countries may encounter in the formulation and application of technical regulations and standards, and to provide advice and technical assistance for their endeavor in this regard (TBT, Article 11). Developing country members are also to be provided differential and more favorable treatment given their special development, financial and trade needs (TBT Article 12).

Article XX (b) of the GATT permits trade actions that “are necessary to protect, humans, animal or plant life or health”. Article XX (g) provides for actions “relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption”. To qualify for any of the exceptions, a measure must also satisfy the requirements of the chapeau to Article XX. WTO Ministerial Declaration (Fourth Session, Doha, November 2001), in the work plan relating to Trade and Environment “instructs the Committee on Trade and Environment...to give particular attention to: (i) the effect of environmental measures on market access, especially in relation to developing countries, in particular the least-developed among them, and those situations in which the elimination of trade restrictions and distortions would benefit trade, the environment and development... (iii) labeling requirements for environmental purposes,” (para. 32).

Box 6 : Major international instruments covering ecolabelling in relation to trade (summarized, in part, after Deere, *op. cit.*)

affected by the ban. The second was brought by the Netherlands and the European Commission, which were affected as secondary exporters of tuna they had imported from primary producing countries that did not recognize the US measures. In both cases the dispute panels found against the US¹⁰. One test was whether Article XX of the GATT allowed exceptions to the trading rules in order to protect animal life or health. The 1994 judgment determined that exceptions to Article XX did not allow one state to take trade measures that can work only by forcing other states to change policies pursued within their own jurisdictions. Secondly, the panels found that the US rules did not so much regulate tuna as a product, but the PPM for the product. As noted above, this remains a contentious issue and affects clear adjudication on ecolabelling schemes focused on PPM. Whether WTO judgments on PPM are colored by the unilateral imposition of bans based on the imposition of domestic PPM, and would be more flexible if the PPM were internationally codified criteria, has yet to be tested (but see the judgment on sardines, in section 5.2.3). Further, the findings in both cases were not taken up by the GATT Council, so neither has direct legal effect within the WTO/GATT system, and, despite their notoriety, they are of uncertain precedence.

5.2.2 Turtle-Free Shrimp

In December 1995, The US Court of International Trade ruled that, in line with section 609 of the US Endangered Species Act, countries that trawl for shrimp in waters where marine turtles occur must, as of June 1996, be certified by the US government to have equipped their vessels with turtle excluder devices (or TEDs). TEDs had been mandatory on US shrimp boats since December 1994. A request was made by India, Pakistan, Malaysia and Thailand to examine whether the US ban was in violation of the United States' WTO obligations. The basis of the complaint was largely the opposition to the extra-jurisdictional and unilateral application of

domestic law. A WTO dispute settlements panel ruled in April 1998 that demanding TEDs on shrimp trawlers violates the rules of the multilateral trading system (Anon 1998). The judgment was controversial and left the WTO open to claims that it was insensitive to environmental issues. Upon US appeal, the WTO Appellate Body sat and delivered a verdict in October 1998, which still found against the US embargo, but treated the case more specifically rather than as a general infringement of trading under the WTO (see account by Shaffer 1998). The Appellate Body found seven flaws in the United States' application of section 609: namely, that (i) insisting that all members adopt essentially the same policy as the United States had an unjustifiably "coercive effect" on policy decisions made by foreign governments; (ii) the US did not ensure that its policies were appropriate for the specific local and regional conditions prevailing in other countries; (iii) even where shrimp were caught using US-prescribed methods, the United States still prohibited their importation if they were caught in countries not requiring the use of TEDs; (iv) the United States did not seriously attempt to reach a multilateral solution; (v) the United States discriminated among WTO members by applying different "phase in" periods during which they must require shrimp trawlers to use TEDs; (vi) the United States made far greater efforts to transfer the required TED technology to countries in the Caribbean/Western Atlantic region "than to other exporting countries, including the appellees"; and (vii) the application of the US measure was "arbitrary" in that the certification process is not "transparent" or "predictable", and does not provide any "formal opportunity for an applicant country to be heard or to respond to any arguments that may be made against it".

This judgment appeared to satisfy only the complainants, as the US believed the judgment to be wrong, and the international and US

¹⁰Despite the further development of the International Dolphin Conservation Programme for the Eastern Tropical Pacific, political wrangling between environmental groups and the US executive and between the US and Mexico continues over these issues; see Anon (2000). The battle between environmental co-operation and trade embargos flares up with the possibility of Tuna Dolphin III, BRIDGES (Cover story) Year 4, No. 6, (July-August 2000), p. 1-2.

environmental lobby felt that it did not meet the immediate needs for the conservation of turtles (although scientific advice was received by the Appellate Body that, in fact, TEDs were only a partial solution to the endangerment of turtles). However, observers have seen the judgment as an encouragement to the adoption of transparent and multilateral processes in the introduction of environmental considerations into trade negotiations to avoid further conflicts in the future (Shaffer 1998), rather than as insensitivity on behalf of the WTO to the plight of an endangered species. While imposition of a requirement for certification to avoid a trade embargo, and voluntary certification as an incentive to increase market share through ecolabelling, are qualitatively different (as are a stick and a carrot), it is likely that developing countries have the right to expect similar forewarning, and transparency and assistance in the implementation of international schemes by which they may be initially disadvantaged.

5.2.3 A Sardine in Europe

Critics of fisheries certification and ecolabelling as currently proposed have suggested that alternative approaches, such as the adoption of fair trading labels, or labels of geographic origin, could be employed, perhaps accompanied by ancillary information to demonstrate the product was “environmentally friendly” (see section 4.1.5). However, geographic labels can also be contentious (and the WTO will continue to investigate these, taking wine in Europe as a case in point: WTO Secretariat 2001). Indeed, the means of labelling of products for trade (irrespective of harvest methods) can invite conflict.

The WTO Appellate Body delivered a landmark decision on descriptive labelling in September 2002. For the first time, a WTO member was held to be in violation of its obligations under the WTO’s TBT (Shaffer and Mosoti 2002). Peru challenged an EC

regulation that maintained that only the species *Sardina pilchardus* Walbaum could be marketed in the EC under the name sardines. Peruvian sardines (*Sardinops sagax*) had been marketed in Germany as “Pacific sardines”, a formula recognized by Codex standard 94, of the Codex Alimentarius Commission. Peru prevailed. The development of the Peruvian case was supported by an interesting coalition, including a Swiss-based Advisory Centre on international law, and a major British NGO (representing consumer associations), which was allowed to provide a letter of support for Peru’s position to the Appellate Body. This judgment clearly argues in favor of the use or development of internationally agreed standards for product descriptions, and elevates the potential role of the Codex in providing such agreed standards. Whilst the rather abstract message of “from a sustainable fishery” is currently all that is being suggested for ecolabelling advocated by the MSC¹¹, the adoption of further types of descriptive labelling – that might elicit more immediate identification with the product by consumers – must also be carefully developed to avoid them being viewed as arbitrary or discriminatory by other producers.

All three of the above examples illustrate the powerful responses generated by producers subject to potential sanctions or exclusion from markets for fish and sea food products, and are further confirmation of the market forces which the MSC’s ecolabelling scheme seeks to exploit.

5.3 New Evaluation of Rules for Trade and the Environment

The thorny nexus of trade and environmental legislation is taken up in the current work plan of the WTO (see Box 6). In response to overwhelming numbers of requests from developing nations, the intention is to launch negotiations on the relationship between existing WTO rules and specific trade obligations set out in multilateral

¹¹The exact message that accompanies the MSC logo on products from certified fisheries is “This product comes from a fishery which meets the MSC’s Standard for a sustainable and well-managed fishery”.

environmental agreements. The negotiations will address how WTO rules are to apply to WTO members that are parties to environmental agreements. As well as the harmonization of trade rules with multilateral agreements, specific attention will be given to ecolabelling. The Trade and Environment Committee is to look at the impact of ecolabelling on trade, and examine whether existing WTO rules stand in the way of ecolabelling policies. Parallel discussions are to take place in the TBT Committee with the intention of identifying rules to be clarified. Public and political perceptions of ecolabelling are often blurred by being bundled with superficially similar product labelling matters e.g. the imposition of sanitary/phytosanitary measures/hazard analysis critical control point (SPS/HACCP) regulations – which then take on a collective and often negative connotation in relation to developing country trade. The Ministerial declaration at Doha carefully separates these issues¹².

Also to be studied is the need “to clarify and improve WTO disciplines on fisheries subsidies, taking into account the importance of this sector to developing countries” (paragraph 28 *op.cit.*). Fisheries subsidies are to be tackled not just as an issue distorting trade (where they form a component of the re-examination of Article VI of GATT 1994 on Subsidies and Countervailing Measures) but also from the perspective of subsidies that contribute to environmental damage by encouraging over-fishing (see WTO secretariat, 2001). These steps will improve clarity and the position of developing countries in deciding their next steps on ecolabelling. They also complement the Declaration of the WSSD (2002), which makes strong recommendations on the need to improve the environmental effects of fishing, but say rather little on its interactions with trade regimes (FAO 2002).

5.4 Allied International and Industry Initiatives Towards Certification and Labelling in the Marine Aquarium Trade and Aquaculture

While regional groupings and fisheries experts from different backgrounds (e.g. SEAFDEC 2001, 2002a; Commission of the European Communities 2002; FAO 2000) have treated ecolabelling with some caution, others (such as, Australia) have started to embrace the need for sustainable fisheries and product labels as necessary components of a modern approach to fisheries management (Department of Agriculture, Fisheries and Forestry, Australia 2002). However, as described, the running is being made by international NGOs and trade organizations. As with capture fisheries, certification and labelling schemes are gaining ground in the marine aquarium trade and in aquaculture.

5.4.1 The Aquarium Trade

The trade in ornamental fish has been growing since the 1970s and now constitutes a multi-million dollar international enterprise. The industry is composed of very many, relatively small enterprises rather than large fishing companies, multinational retailers or governments. Currently about 45 countries supply the market. However, like the trade in capture fisheries products, the trade is predominantly from developing countries to northern developed countries: the major suppliers (of marine species) are Indonesia and the Philippines, with Brazil, Maldives, Vietnam, Sri Lanka and Hawaii also supplying significant quantities (Wood 2001). Around 98 per cent of the industry is based on organisms captured from the wild (MAC 2002).

The main consumer markets are the United States, Europe and east Asia, especially Japan. The total

¹²In paragraph 32 of the declaration of the WTO's 4th Ministerial at Doha: "...the outcome of this work...shall be compatible with the open and non-discriminatory nature of the multilateral trading system, shall not add to or diminish the rights and obligations of Members under existing WTO agreements, in particular the Agreement on the Application of Sanitary and Phytosanitary measures, not to alter the balance of these obligations, and will take account of the needs of developing and least-developed countries".

import value of the specimens is calculated to be US\$28 to 44 million. Total global annual catch could range from about 14 million to over 30 million fish¹³. Invertebrates and corals make an increasing proportion of the total (Wood 2001). Although the economic importance of aquarium fisheries is relatively small in comparison with food fisheries, the industry provides jobs and income for many people in the supplying countries. In the Philippines and Indonesia, some poor coastal dwellers embark on dangerous and environmentally damaging means of collection (such as hookah diving and the use of explosives and poisons) to sustain their livelihoods. Over-collection and the damage to reef habitats have called the sustainability of the trade into question¹⁴. These issues, and internal pressures from the industry to improve the handling, welfare and survival of live animals during shipping, have led to the development of the Marine Aquarium Council (see Box 7).

Promoting a participatory approach, the MAC has progressed to the point of initiating certification of companies and collection areas in the Philippines, with the agreement of the national fisheries line

agency. Progress in certification is reported from Indonesia and Fiji (MAC 2002). A major issue for the trade in live fish is the certification and monitoring of the chain of custody, and this experience may be of value to other similar schemes (see the issue of high value product tracing in fisheries, section 4.1.3). The responsibilities of MAC extend not only to raising the visibility of the label (in both the supplying and receiving countries) but in continued education of collectors. Preferably, conservation NGOs and other concerned users of the inshore and reef habitats – including local governments, fishers, dive tourism enterprises, etc. – will, in order to create a genuine fair trading arrangement, address the issue of livelihood alternatives for collecting families in poor circumstances. The fundamental difference between the aquarium and fisheries markets is that the former is based on the disposable income of a sector of the population already attuned to the beauty and “value” of nature. It is to be expected that this environmentally aware market may be more willing to pay the price premium for certified aquarium fish than those shopping for fish as a staple food source from the family food budget.

The Marine Aquarium Council (MAC – www.aquariumcouncil.org) is an international, not-for-profit organization based in Hawaii, USA, that brings marine aquarium fish 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 ecosystems by creating standards and certifying those engaged in the collection and care of ornamental fish from reef to aquarium. With initial emphasis on collection from the wild, the MAC has, to date, developed core standards for ecosystem and fishery management; collection; fishing and holding; and handling, husbandry and transport. The core standards outline the requirements for third party certification of quality and sustainability and are accompanied by best practice guidance documents that provide advice to industry operators on how they might comply with the standards. Full standards will be developed by, approximately, mid 2003, and will be extended to include standards on mariculture and aquaculture management. The standards were developed by an international public process and will seek to operate consistently with the WTO Code of Practice for Standard Setting Organizations.

Box 7: The Marine Aquarium Council

¹³ As can be noted, there are wide confidence limits to these estimates, as international efforts to quantify this trade are still in progress. One of the issues is to distinguish the trade in freshwater fish from the overall volume traded. Figures for this component of the trade are harder to come by and harder to interpret because a large proportion of the freshwater fish traded are re-sales of cultivated species. However, the bulk of the trade is conducted in the same south to north direction, also concerns extraction of fish from sensitive habitats (e.g. rainforest rivers), and may benefit from the application of international standards in addition to the regulations governing trade in already endangered species encompassed by CITES.

¹⁴ See similar issues in relation to the live reef food fish trade, not discussed in this essay: Barber C.V. and Pratt, V.R. 1997. Sullied Seas: Strategies for combating cyanide fishing in SouthEast Asia and beyond. World Resources Institute and International MarineLife Alliance-Philippines, Washington D.C.

This is yet to be tested. It will also be important to monitor the success of MAC-like schemes in countries like the Philippines, where there is a substantial domestic market for aquarium fish. The existence of an alternative market that may initially be more reluctant to meet the higher prices for certified fish would provide a test of the “leakiness” principle for ecolabelled products described in section 4.1.3 and further discussed in section 5.5.

5.4.2 Aquaculture – International and Industry Moves Towards Certification of Shrimp and Salmon

There are many different forms of aquaculture, and substantial differences in the value of the products, the contribution to livelihoods, the equity delivered, and the costs to the environment of the different forms and practices. In public and even in donor agency perceptions, however, the worst-case scenario may jeopardize the whole industry. The rapid and unregulated intensification and expansion of coastal areas of shrimp farming has resulted in habitat destruction, pollution and disease – and, in some cases, collapse of aquaculture and abandonment of ruined land. Such scenarios have led to outcry against shrimp farming (and even generically against aquaculture that uses large amounts of by-catch in fish-meal-based feeds: e.g. Naylor et al. 2000). Shrimp farming only represents about 2.6 per cent of total global aquaculture by volume (1.1 million tonnes) but has a value of about US\$6.7 billion (or 12.5 per cent of the total value of the US\$53.6 billion aquaculture trade). Developing countries benefit substantially in terms of revenue from this trade. Lem and Shehadeh (1997), in reviewing international trade in aquaculture up to 1996, pointed out that aquaculture was not paying the price of social and economic externalities. They believed that social concerns were already influencing shrimp exports to developed country markets, and that more sustainable practices, including ecolabelling, will be forced on producers. As a contribution to an FAO technical consultation on policies for sustainable shrimp aquaculture, the International Collective in Support of Fishworkers (ICSF) put forward a ten point plan highlighting the social and environmental issues that needed

to be addressed, within which ecolabelling was promoted as an environmental measure (ICSF 1998). The point is further made that, once the true social and environmental costs of shrimp aquaculture have been internalized, the economic incentive driving the expansion of shrimp aquaculture may be reduced – although it is unlikely that it will disappear entirely.

Indeed, both international agency-inspired and trade-inspired initiatives to improve the environmental performance of shrimp culture (and other high value species) have been developed (see examples in Box 8). The initiative of the International Consortium on Shrimp Farming and the Environment focuses on incorporating case studies of shrimp farming around the world into the development of best practice guides. Progress to certification is viewed as a desirable next step. However, it is probably not appropriate to treat every coastal industry as an individual entity, and there will be a need to harmonize certification and licensing of operations with internationally agreed norms and objectives for sustainable development. Best practice guidelines will need to be developed against explicit, overall criteria for environmental improvement as a whole (Howarth 1998). The World Bank, the FAO and their partners in the consortium are well placed to establish links between any guidelines developed and international declarations and agreements. Compliance with international guidelines provides developing countries the potential best means of improving the environmental and social performance of aquaculture while maintaining access to world markets. In the long-term, the viability of aquaculture development will be market driven; it will need to account for consumer demand and have the capacity to adapt to the structure and demands of the target markets. Quality control schemes and management of safety aspects are integral to the market and industry development (Josupeit et al. 2001). Unfortunately, developing countries have seen the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) under GATT, together with ecolabelling, as a bundle of potential barriers to trade in (particularly) aquaculture and fisheries products

(see section 5.1 above). However, there has been wider acceptance of HACCP and food safety standards dictated by the Codex Alimentarius, because these two frameworks have been largely accepted as international norms (Josupeit et al. 2001). There are, so far, no internationally accepted norms for ecolabelling or environmental certification in aquaculture.

The tenure of aquaculture enterprises is usually well defined, and in the hands of individuals or small groups. There is better control on the use of inputs and clear rights over the outputs produced.

It might be anticipated, therefore, that changes in management, and responsiveness to certification, licensing and surveillance will all be more readily carried out, akin to the monitoring of terrestrial farming practices, than is the case for capture fisheries. However, the wider “eco” purpose of ecolabelling is more compelling in capture fisheries than for aquaculture. The issues of sustainability surrounding shared resources, the lack of control on the level of catch, and the inputs required to obtain a given catch all call for more responsible harvesting behavior of individual fishers within the overall industry.

International consortium on Shrimp Farming and the Environment (NACA – the Shrimp website, www.enaca.org/Shrimpwebsite 2002)

This website describes the formation and the activities of the Consortium Program entitled “Shrimp farming and the environment”. The partners are the World Bank, the Network of Aquaculture Centers in Asia (NACA), WWF and the FAO. Case studies of shrimp aquaculture have been conducted since 1999, in collaboration with stakeholders in the industry around the world. A stakeholder meeting in Washington D.C., USA, in March 2002 agreed that better management principles (BMP) should be agreed throughout the shrimp industry – i.e. the need for self regulation has been recognized on the bases of public concern for the environment and of industry concerns about sustainability and commercial image. The meeting agreed that international work on certification systems should be initiated...based on the core BMP, and went as far as to suggest that financial and tax incentives for implementing BMPs should be explored by the Consortium.

Global Aquaculture Alliance (accessed 25 Nov 2002) www.gaalliance.org

The Global Aquaculture Alliance (GAA) is an international, non-profit trade association dedicated to advancing environmentally and socially responsible aquaculture. The GAA promotes best management practices for sustainable aquaculture through its responsible aquaculture program, conferences and other activities. This US-based organization has developed several individual codes of practice relating to good aquaculture practices and a certification scheme (the “Aquaculture Certification Council” www.aquaculturecertification.org) to meet the needs of the shrimp industry in the first instance. The logo of certification is meant as an indicator to wholesalers, and is not currently offered on final products for retail.

Scottish Quality Salmon (accessed 25 Nov 2002) www.scottishsalmon.co.uk

Scottish Quality Salmon is dedicated to improving the quality and sustainability of salmon farming in Scotland and the growing membership now represents around 65 per cent of the tonnage produced by the Scottish salmon farming industry. The company operates an independent food product certification process, but also helps salmon farming enterprises meet and comply with strict government imposed regulations on feed, the regulatory framework and fish welfare. Scottish Quality Salmon has been instrumental in developing environmental management systems that are designed to help members formalize, integrate and extend their existing environmental control measures in order to meet ISO 14001 standards.

Box 8 : Aquaculture – selected examples of international and industry moves towards certification of shrimp and salmon

5.5 Can Ecolabelling Schemes Succeed? Economic Choice, Substitution and Leakiness

The concept of ecolabelling is based on the assumption that consumers are willing to pay the “green” premium on goods in order to satisfy their beliefs in environmental sustainability. Will consumers pay the price? The answer, so far, is less than clear-cut. Dawkins (1995) and Wessells (see section 3.3 in Wessells et al. 2001) have reviewed the available theoretical and practical evidence for this relatively new area of environmental marketing. Theoretical analysis of labelling shows that, up to a point, in a case where the quantity demanded of an environmentally friendly product exceeds the quantity supplied, the ecolabelled product will increase in price. However, beyond a certain price differential, adverse effects can be generated. Depending upon the price premium for labelled goods (and the relative size of the market captured by certified products), the price of both certified and uncertified goods can increase in the market. This could lead to over-production of uncertified goods in response to the higher prices. In forestry, for example, if certification is mandatory, producers may switch away from certifiable forestry into other uncertified land use practices. Environmental labelling in fisheries is almost too recent to conduct *ex post* economic analyses. Thus, some of the assessments (Wessells, Johnston and Donath 1999; Johnston, Wessells et al. 2001) are surveys of potential readiness to pay, not actual measurement. This *ex ante* assessment seems to indicate willingness to pay a premium price in a proportion of the population (evaluated in the USA and Norway). This willingness to pay depends on the degree of knowledge in the population about what ecolabels represent; there are likely to be large differences in willingness to pay between consumers within countries, as well as between countries and regions. The studies were careful to compare like with like,

e.g. certified salmon with uncertified salmon. However, there are quite large possibilities for substitution between types of seafood products (e.g. lobster, crab and shrimp; oysters, clams, mussels, scallops). This potential for substitution is particularly apparent amongst white fish fillets, as is evidenced in the growth in the market of tilapia and catfish fillets from freshwater aquaculture. At large price differentials (in markets not bound to buying fish as a cultural tradition), there can also be substitution effects with other white meat products like chicken. The confounding effects of introducing further price differentials into seafood supply and demand through ecolabelling have not so far been studied.

These first essays in evaluation have been based in countries where consumer populations are expected to be relatively eco-conscious. However, two of the major markets for seafood are in Asia (Japan’s imports accounted for 25 per cent of the global trade total in 1999 – FAO 2001); and China is prospectively one of the largest in the world¹⁵ (Delgado and Courbois 1997; Yang 2003). Neither market is particularly eco-conscious, and China has its own huge and diverse domestic market in which ecolabelled products may find it difficult to make a foothold. This is the case, at smaller scales, in most of the countries of South and Southeast Asia presently. The level of Japanese demand is so high that it is a stimulus to illegal fishing by others (Kattoulas 2002).

An issue alluded to by Wessells et al. (2001) is the comprehension by the consumer of what ecolabels actually mean and whether or not consumer mistrust of “advertising” will prove a serious hurdle to acceptance. It is clear that some consumers can be motivated to react to the actual or potential loss of icon species (dolphin, turtle, seal), but the less-easily conveyed idea of “ecosystem sustainability” of unseen aquatic systems, may defy easy marketing

¹⁵In 2000, China imported 2.52 million tonnes in volume and US\$1.85 billion in value of fish and seafood products. Key factors in the trade currently are the high importation of fish-meal and low value species used for aquaculture feeds, and the tendency to export high value species. However, if the growth in overall meat consumption is taken as an indicator, China’s rapid development, its large population and growing affluence will increase the trend to import higher value food fish.

– particularly when the general public has no simultaneous sympathy for magnificent animals such as tuna or swordfish. One could speculate that it will be easier in the future to label and promote farmed (aquaculture) species as an alternative means of protecting wild resources, than it will be to educate the buying public about biomass limits and harvesting from the wild.

There is a current appreciation of fish as a healthy commodity (without, so far, any damaging examples

of disease or toxicity problems arising from aquaculture at the level of the foot and mouth disease/bovine spongiform encephalopathy scares affecting markets for red meat in Europe). This will keep demand high in the health-conscious and (potentially) eco-conscious US and European markets. However, high demand from markets not requiring ecolabels in the future could marginalize a world-wide approach to ecolabelling – leaving it as a mechanism to satisfy only retailers seeking niche markets and not as any overall improvement in fisheries management.

6 The Importance of Ecolabelling with Respect to Other Management Initiatives

Given the size of the market for fisheries products, ecolabelling may remain of importance to some nations' retailers but not to others. However, assuming it can work as a market mechanism, the altruistic *raison d'être* for ecolabelling is that it is also a stimulus to the improvement of fisheries management – and it is increasingly being considered in this regard (Commission of the European Communities 2002). Presently, the current MSC criteria appear scientifically well founded but difficult to apply in the context of data-poor, tropical, multi-species fisheries in developing countries. This has been recognized by the MSC and the WWF, and steps are being taken by these two organizations to examine the requirements in relation to the appropriate indicators and guidelines for the application of certification to small-scale, developing country fisheries (see section 4.1.2). Other major initiatives in fisheries management globally involve the development of indicators, ecosystem approaches to management, and community involvement and devolution of governance. The next three sections examine these three new approaches and how the requirements for certification may be integrated.

6.1 Indicators of Fisheries Management

Fisheries science is plagued by uncertainty – assessment of fish stocks is obliged to rely on random sampling of the whole, and biophysical interactions governing the success of recruitment to any fishery produce wide natural fluctuations in this fundamental parameter. Presently, standing stocks in many of the world's fisheries are below historical levels, and the ecosystem interactions between fish populations that might occur at higher (or lower) overall abundances are still unknown for the majority of species. Goals for fisheries management can be set annually on the basis of the best available evidence, but the results must be

frequently assessed because of these uncertainties. There must be an ability to adapt targets and management in the light of unexpected changes, and it must be possible to discern these changes amongst long-term biological trends. The requirement to embrace uncertainty is embodied in the precautionary principle of the Code of Conduct for Responsible Fisheries (FAO 1995). Further, two issues in the development of fisheries management are yet to be resolved.

The first is the more accurate measurement of management performance in fisheries so as to set more accurate limits and to monitor sustainable fishing practices (these requirements are essentially enshrined in the MSC principles). However, in many countries, there is a simultaneous move to devolve authority to wider groups of stakeholders (in an effort to improve compliance) and to manage fisheries locally. To accommodate these two trends a pragmatic balance must be struck; this will require the development of sets of indicators which are sufficiently precise for management, but which are more descriptive of the local fishery in terms that the stakeholders can understand and utilize (FAO 1999; Garcia and Staples 2000; Garcia et al. 2000; Degnbol 2001). If the certification agencies wish to involve the range of global fisheries, they, like the FSC, will have to adapt their criteria for certification to the varying local circumstances. However, making choices amongst indicators is not always a straightforward task. Gorfine et al. (2001) describe attempts to define single measure reference points for a sessile, invertebrate species (abalone) in response to Australian Commonwealth regulations that require each fishery to be developed sustainably (using very similar principles and criteria to those of the MSC). A single indicator was considered insufficient, and biomass assessments are complicated when background information is incomplete, or when the assessments are distorted by illegal harvesting.

Development of simple but effective indicators is something of a conundrum (of which both the MSC and the WWF are aware), and is likely to require many empirical trials of indicators in different types and scales of fisheries before confidence in the setting and use of indicators for local fisheries management is achieved. It is recommended that a number of these trials be undertaken in developing countries with government, agency and NGO support, with the results being made available internationally. The efficacy of such indicator sets and frameworks for sustainable management will need to be demonstrated before they can be incorporated into internationally recognized schemes for certification and ecolabelling that are applicable to all scales of fisheries.

6.2 The Ecosystem Approach to Fisheries Management

A second dimension of the new paradigm for fisheries management is the ecosystem approach to fishing (Gislason et al. 2000). The implementation of this approach is key to shifting the focus of fisheries management from protracted discussions of over-fishing and habitat degradation to management for sustainable development, as urged by the WSSD. The ecosystem approach to fishing has been presaged in many earlier international documents, and is currently the subject of work by the FAO and others¹⁶. Once crystallized, an international effort will be required to move the concept forward. The publicized collapse of conspicuous fish stocks around the world, and the urgings of the WSSD declaration, give a driving force to consideration of this approach, which has already been adopted by some developed countries (e.g. Australia *op. cit.*) and international conventions (Constable et al. 2000). We do not underestimate the challenges in its adoption. In the case of the Alaska ground fish fisheries, attempts to introduce the concept include public participation, reliance on scientific research and advice, conservative catch

quotas, comprehensive monitoring and enforcement, definition of TACs and fishing quotas, strict rules on by-catch (where species caught as by-catch are factored into TACs for that species, etc.), spatial distribution of fisheries, and potential networks of marine protected areas (Witherall et al. 2000). In the case of developing countries, primary issues would also include controlling access, reducing excess capacity and generally improving the monitoring of catches. The introduction of these practices would be difficult for many developing country and small-scale fisheries. The ecosystem approach is specifically included in the MSC principles, and research is required in how to turn the intention into practice.

There is, however, a political issue in the presentation of the ecosystem approach because the concept is still emerging, and, in many cases, lack of precise scientific knowledge of (particularly marine) ecosystems makes full implementation difficult. The MSC principles (and the very similar ones adopted by Australia) assume that ecosystem management can be put in place. In the case of the MSC certification of the hoki fishery, fishery management planning has been driven towards the development of more explicit ecosystem-conserving activities, even though the fishery has been certified as an interim measure. It is, therefore, important to stress for developing countries that a) ecosystem considerations should be built upon the existing fisheries management regime and not be seen as something separate from it; b) appropriate time and experimentation is required for the full development of the concept; c) in terms of fisheries management plans, it will mean more attention to by-catch and habitat protection issues; d) in terms of national governance, it will mean moving beyond fisheries indicators *per se*, to paying more attention to the legal and administrative exercise of the property rights of fishing groups, and integration of fishing activities with other uses

¹⁶Draft Guidelines on Ecosystem Approach to Fishing. FAO (in preparation). Note also, Report of the First SCOR-IOC Working Group 119 (2001) "Quantitative ecosystem indicators for fisheries management" held 5-6 October 2001, Reykjavik, Iceland (www.ecosystemindicators.org - accessed November 2002). See abstracts of papers presented at the preceding Reykjavik Conference (1-4, October, 2001) on responsible fisheries in the marine ecosystem. FAO Fisheries Report No. 658, Supplement. See also, WWF Australia. 2002. Policy proposals and operational guidance for ecosystem-based management of marine capture fisheries. Available from <http://www.wwf.org.au> p. 80.

of the marine waters and the coastal zone; and e) the rate at which it is implemented as a principle driving certification of sustainable fisheries management should depend upon the international state of knowledge of the concept and process, and the rate of assistance for its implementation in developing countries. The development of the ecosystem approach to fishing is too important to ignore, and ecolabelling concerns should not be presented as a barrier to its implementation. More should be done to translate the concepts into measures to be implemented – and artisanal or simply improved gears (which limit by-catch or the catch of juveniles of the target species, e.g. Munro et al. 2002) are likely contributors to this. Nevertheless, access, zoning and monitoring remain three essential issues to be addressed by national governments.

A clear conceptual advantage of the ecosystem approach is that it moves from management of catches to a set of integrative measures that include conservation. The cost of better management is the cost of environmental conservation. The ecosystem approach, properly implemented, would allow the identification of the measures required for exploitation and conservation of fisheries, and the internalization of so far unpaid environmental costs into the fishing industry. Ecolabelling may be a partial means to recoup some of the additional costs, but improved management will also come at some temporary social costs which, so far, most fishing nations have been unwilling to recognize and bear. Nevertheless it would seem better to accept these costs, than suffer fisheries and environmental failures which would lead anyway to the loss of livelihoods and possibly to social conflicts.

6.3 Certification and Community-based Fisheries

Over the past decade community participation in the management of environmental assets has grown in importance. Such participation is by no means new, as common resources such as grazing lands, irrigation systems, fisheries, forests and wildlife have historically been managed by the people who

use them. What is new is the perception of policy makers that community involvement is needed not only in finding a solution to perceived market failure (such as overexploitation of a fishery) but also, and more importantly, in the development of institutions for managing natural resources. Similarly, community-based certification as a way of dealing with the overexploitation of fisheries is promoted as the best way of including small-scale fisheries. This approach involves selecting sites where there are organized communities that manage fisheries. The concept of certification and labelling is then discussed with the community and the criteria that have to be fulfilled by the fishers in the community are agreed upon. The fishery is then assessed using criteria that account respectively for the stock conditions, the impact on the ecosystem, and the management system that is in place for the fishery. The community then takes responsibility for ensuring that the fishing practices within their jurisdiction follow the certification criteria.

The key problem with community certification is the question of what is the relevant community to certify. In most small-scale fisheries the community is more than just fishers; it includes also farmers, foresters and part-time workers. Dealing with only a fishing community does not work in most small-scale fisheries. The other major problem with community certification relates to the scale of the resource and the effective control the community can exercise over the resource. The larger the scale of the resource, the harder it becomes to manage within a community due to activities of other groups, either upstream or downstream. An example given earlier is the control that a small-scale fishing community could have over the subsequent post-harvest processes and chain of command. The scale issue continues to be a major challenge for community-based management systems.

The increasing devolution that is taking place in the fisheries of Southeast Asia is an indication that there is potential for community-based certification schemes. However, the wider aspects of certification are still seen very strongly by fishers of the region as a government responsibility. For certification to work in Southeast Asia, and in the developing world

in general, governments will need to play a strong role, including in the financing of certification. At present, the possibility of attracting a significant portion of developing country fisheries into certification schemes appears to be slim. The problem of an oversupply of uncertified fish products will be the norm in the developing world, and this will increase the financial risks and possible losses for those traders who volunteer for certification.

6.4 Avenues for Research and International Support

Many of the issues and objections raised in sections 4, 5 and 6 of this paper have not been sufficiently tested to allay concerns over ecolabelling in developing country fisheries. To be relevant in the producing country context, ecolabelling and certification schemes will have to be developed with, and respond to, the major developments in fisheries management. There is ample scope for such testing and evaluation of small-scale and developing country issues to be carried out in line with steps to improve fisheries management generally (see Boxes 9a and 9b for some of the key topics arising from this discussion).

While we consider that the definition of user groups and community-based management in relation to certification is one of the keys, there are several research roles to be played by international

organizations and agencies. There will be a need to develop awareness of the issues in more countries and, for example, for the ASEAN countries to join this debate. There is a need to facilitate and improve the readiness of NGOs and governments to come together to test useful and equitable practices. Regional organizations could be invested with authority by governmental groupings to help develop regionally applicable labelling schemes that are linked to the international acceptance of generalized criteria and principles. Third party certification must be recognized as a requirement for products to be globally accepted.

6.5 Setting the Agenda and a Call for Response

One of the reasons for ecolabelling being contentious is the way in which the agenda is being set. The majority of United Nations and other international institutes have been established as organizations of member states. They tend to restrict deliberations to the mandate of the organization, and resolve issues according to international law or with reference to international guidelines for the subject matter. Such organizations recognize the equivalence of states and the sovereignty of governments over the affairs of the state and its resources. Delegations to such bodies reflect the government position and not necessarily the consensus of public or scientific opinion. In the past, developing countries have been relatively well-

- Feasibility and consequences of extending ecolabelling to tropical, developing country fisheries
- Feasible indicator development and testing for all scales of fisheries management
- Analysis and evaluation of the efficacy of such schemes in improving fisheries management
- How best to ensure equity for the potential beneficiaries of access to the licensing schemes, the sale of products and domestic consumption in small developing countries where even current catches are not properly evaluated and recorded
- Impact of certification of one group in a fishery on others
- Impact of certification on prices of fish, especially high value fish, which may become beyond the reach of most of the consumers in developing countries
- Impact of price differentials between certified and uncertified fisheries and within fisheries within these groups
- Impact of certification on uncertified fisheries if fishing effort and fishing capacity is redirected from certified fishery to uncertified or illegal fisheries

Box 9a : Issues for research

- Equitable opportunity to participate
- Government involvement in access regimes and national planning (including the restoration of credibility of ecolabelling schemes) for improved management
- Improved harmonization of environmental and trade regimes
- Clear trade rules on non-product PPM
- Financial support and institutional capacity building to take on the improved monitoring system(s) required
- Support for learning, through the implementation of regionally appropriate management and certification schemes, and for the international harmonization of certification and ecolabelling standards (bearing in mind the need for equivalence)

Box 9b : Issues for policy support in the development of ecolabelling and certification of sustainable fisheries

served by such equivalence principles, although a drawback of interstate dispute settlement is that political considerations, particularly balancing environment against trade, can lead to compromise agreements – or even to countries being unwilling to fight for their “rights” on an issue, fearing economic reprisals. Unilateral actions or sanctions by states have been discouraged (Kingsbury 1994).

Also, in a globalizing world, NGOs, trade associations, multinational companies and other elements of civil society are finding means to raise environmental and other issues outside the intergovernmental structure. Consortia (or “advocacy coalitions”), sometimes including governments, are formed according to the topic in question (Elliot 2001). This has the advantage of focusing both public and private expertise on the issue at hand. The consortia so formed are less susceptible to deflection by political trade-offs, although they are largely dependent upon governments to act on the outcomes (or to legislate for others to act). Some developing countries object *a priori* to this extra-territorial infringement of rights – as exemplified by ecolabelling – whilst others would argue that extra-territorially imposed environmental regulations are unlikely to strike the right balance between environmental conservation and social and economic development at the national or local level (Rotherham 2002). However, in cases where there are no clear international rules to guide the debate, consensus is hard to achieve, or resolution of the issues is left to the interpretation of available international

instruments. As international law covering environmental issues is still less well-founded than trade law, the WTO is being forced to provide judgments on environmental disputes for which, in the past, it has been ill-equipped (Downes and van Dyke 1998). The interstate deliberations of the WTO have previously allowed relatively little input from non-governmental actors. The outcomes of the WTO Ministerial meeting in Doha mark a change towards the explicit acceptance of the need to examine the rules of the WTO covering environmental and trade issues. Also, the acceptance of *amicus curiae* briefs, or other written depositions, from NGOs and governments during the deliberations on environmental issues (Shaffer 1998; Shaffer and Mosoti 2002) marks the recognition that additional scientific or public sector perspectives should be admitted to international arbitration on the environment (as foreseen by Kingsbury 1994).

A likely consequence of globalization is that international viewpoints, set in increasing measure by transnational advocacy coalitions, will impinge on the domestic level of governance. It is, therefore, in the interest of all states to engage in the development of international guidelines for the environment that can inform and regulate actions (or adjudications) in a more rational and standardized manner. In the case of new initiatives to enhance the sustainability of fisheries management, states must decide whether the agenda has really been set by the declaration by Unilever, or by the FAO Code of Conduct for responsible fisheries. Or will the WSSD Declaration on the

urgent action needed to manage fisheries, which resulted from a broader consultation and more synthetic intergovernmental process on environmental issues and development, set the environmental agenda for fisheries? For the satisfaction of developing countries, each of these attempts to stimulate action must lead, as rapidly as possible, to the formulation of harmonious, internationally acceptable and recognized guidelines for sustainable fisheries management at global and regional levels. A parsimonious approach would be to recognize the overlapping levels in these calls to action, and to make clear the need for guidelines as a nested set of management guidelines operating at global, regional and local levels. There will be a need to recognize that, whilst the principles and criteria at higher levels can be espoused, the verifiers and indicators of sustainable fisheries are likely to

require development according to more local criteria (as described by Degnbol 2001). Accordingly, the recognition of technical equivalence in the indicators and monitoring requirements for individual types and scales of fisheries should be made a higher order principle, and efforts made to put the measures into practice empirically. This would take the discussion outside the realm of contentious, trade-related issues and into a more practical, operational stage from which all could learn. Standards agencies, which can assist nations (or regional trade groups – Helland 2001) deal not only with environmental labelling but also with other health and product quality issues, should be established in developing countries to provide them with the capacity and bargaining power needed in the wider debates on labels (Rotherham 2002).

7 Conclusions

While this paper has ostensibly been a discussion of ecolabelling in fisheries, we have argued that a preoccupation with ecolabelling tends to focus defensive debate on only one aspect of a larger issue. The emphasis must be on improved fisheries management. Ecolabelling and market share are just part of the rewards for more sustainable fisheries management regimes¹⁷.

Developing countries must move towards developing access rights to fisheries and to capacity monitoring as national priorities (before the collapse of fisheries drives an unregulated political process). National efforts should be dovetailed, where possible, with regional and international research into devolved governance arrangements (since the responsibility of fisheries' user groups, or quota holders in other fisheries, generally results in the development of more sustainable fisheries plans); indicators; and the development of ecosystem fishing as an inter-sectoral issue, not just an isolated fishery issue. Governments should be prepared to work with a range of regional and international actors to extend indicators for local use and to develop their application through adaptive management. Disagreement with ecolabelling must not be used as a scapegoat for inaction (or to cover the fact that some countries still make large amounts of money out of shrimp, and trash fish for fishmeal from otherwise impoverished fisheries).

Is it intellectually honest to downplay the role of fisheries certification on the basis of current criteria being too difficult, but at the same time to promote the new paradigms in fisheries management – which encompass many of the same goals (including ecosystem approaches) and are as difficult? We would reconcile this apparent contradiction using the evidence to date, which suggests that good

national fisheries management regimes predispose to the development of conditions that allow certification, but that the current MSC standard is almost impossible to translate and implement in many developing countries and small-scale fisheries. Even developed countries have considerable research to do to find means to implement the ecosystem approach satisfactorily. Revision of national fisheries management will have to precede the *ad hoc* development of certified fisheries, which may meet retail needs for the trade but which will fail as the sole stimulus to the global improvement of fisheries management. Further research on the translation of the MSC standard – and adoption of indicators that could enhance the probability of small-scale fisheries accessing certification schemes – will be a worthwhile contribution to the overall global requirements. But the emphasis should be on national governments (working regionally where possible) to take steps to improve fisheries management and to join in debates and trials about how best this is achieved. The development of agreed international management standards for sustainable fishing will assist recognition and compliance under international trade law. In the developing world, the role of governments will be crucial in making or breaking certification schemes. Forging advocacy coalitions that include governments, rather than attempting to impose extraterritorial labelling schemes, is required for success.

Further research is also required to evaluate the environmental and social costs of fishing, so that the true costs of management can subsequently be reflected in fish prices. Parallel efforts should be made to evaluate the means by which ecolabels can be given to aquaculture products. Attention should then be paid to the interplay (in potentially eco-sensitive markets) between labelled aquaculture

¹⁷ Roheim, C.A. (in press). Early indications from the Marine Stewardship Council's ecolabelling of seafood. *Thalassorama Marine Resources Economics*.

products and wild-caught products, to avoid industrial aquaculture products undercutting trade in sustainably-fished, wild-caught seafood, and thus turning the current debate on its head.

At the international level, the WSSD has set several ambitious deadlines for the implementation of plans of action to reverse the parlous state of fisheries management. The somewhat longer deadline (until 2010) suggested by the WSSD for the general application of the ecosystem approach to responsible fisheries reflects three issues that need to be addressed in the intervening period. These are the further development of the approach, including the scientific, data and analytical requirements; the development of conservation and management measures appropriate to the approach; and the introduction of new regulatory mechanisms and an evaluation of the socio economic consequences (FAO 2002). The MSC and its advocacy coalition can join in the development and testing of such indicators and approaches. It would seem unreasonable to expect fisheries to comply stringently with a concept, the underpinnings of which are still being developed.

Utopian calls for better management and the adoption of "right principles" will not go far without funding (FAO 2002). Unless judged to be monopolistic, international trading organizations can be instrumental in assisting the adoption of various principles, including environmentally conserving ones. Part of the substance of the WTO's Appellate Body findings against the US in the tuna-dolphin dispute were based on the fact that the US could not impose conditions on other countries in a manner different from that which they would use to condition and inform their own national organizations in the imposition of new environmental law. The implication is that the

partner countries require adequate time, and practical and financial assistance to prepare for, and to implement, new and improved management. This is not a call to delay, rather a call for nations to take the lead in changing management, and for donors and those who benefit from the commercial exploitation (particularly at the fishing industry and retail levels) to help pay for the research and management required. Trade in fisheries was not specifically mentioned in the Declaration of the WSSD (although it is, of course, implicit in the work plan of the WTO), but the financial benefits from the trade are one of the most obvious sources of financing improved management and paying the costs of sustainable fisheries.

As international bodies review the pros and cons of ecolabelling as part of action plans for their own fisheries policy (e.g. Commission of the European Community 2002), they must also consider how the north can assist governments of the developing countries to examine controlled access, the removal of excess capacity and improved monitoring of their natural resources. The experience thus far with certification and labelling shows that all the certified fisheries are in countries where there is substantial fisheries management and governance. Having in place good management regimes at the national level would seem to be a prerequisite to certification and labelling, and developing countries will have to move toward improved management in general to help ensure their fisheries can enter into third party certification schemes. Paying for sustainable management will impose additional costs but the costs of conservation may be a means of internalizing the real environmental costs of fish as a product. True pricing of fish in the world market will be of advantage to the developing countries in trade terms. Sustainable fisheries

Acknowledgements

We are grateful to Chris Grieve, Yemi Oloruntuyi, John Poulsen, Bruce Shallard and Cathy Roheim Wessells, for constructive reviews of the manuscript, for responding to our questions and for the provision of relevant literature. We also thank WorldFish Center colleagues Bing Santos, Choo Poh Sze and members of the Information Services staff, particularly Chew Bee Leng, for enthusiastically responding to our requests for materials and references. The views expressed in this paper are those of the authors.

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Annex

MSC Principles and Criteria for Sustainable Fishing

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.

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 favor 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.

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 minimizes 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 resources 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. incorporate an appropriate mechanism for the resolution of disputes arising within the system;
6. provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing;
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 or sex) captured and landed in association with, or as a consequence of, fishing for target species;
 - b) identifying appropriate fishing methods that minimize 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 and, control, surveillance and enforcement which ensure that established limits to exploitation are not exceeded and specifies corrective actions to be taken in the event they are.

B. Operational Criteria

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); minimize 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 minimize 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. minimize 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 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.

Acronyms

AHP	Analytical Hierarchy Process
BMP	Better Management Principles
C&I	Criteria and Indicators
CAR(s)	Corrective Action Request(s)
CIFOR	The Center for International Forestry Research
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
EC	European Commission
FAO	Food and Agricultural Organization of the United Nations
FSC	Forest Stewardship Council
GAA	Global Aquaculture Alliance
GATT	General Agreement on Tariffs and Trade
HACCP	Hazard Analysis Critical Control Point
HFMC	Hoki Fishery Management Company
ICSF	International Collective in Support of Fishworkers
IFOAM	International Federation of Organic Agriculture Movements
ISO	International Standards Organization
ITQ(s)	Individual Transferable Quota(s)
MAC	Marine Aquarium Council
MSC	Marine Stewardship Council
NACA	Network of Aquaculture Centers in Asia
NGO(s)	Non-Government Organization(s)
OECD	Organisation for Economic Co-operation and Development
PPM(s)	Processes and Production Method(s)
QMS	Quota Management System
SCS	Scientific Certification System
SPS	Sanitary and Phytosanitary
TAC	Total Allowable Catch
TACC	Total Allowable Commercial Catch
TBT	Technical Barriers to Trade
TED	Turtle Excluder Device
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWF	Worldwide Fund for Nature



Many industrial and small-scale fisheries around the world are declining because of over-fishing and environmentally damaging fishing practices. Despite evidence of the decline, finding incentives to induce better fisheries management is proving problematic. One reason for this is that fish and seafood products remain highly profitable commodities, extensively traded in international markets. It has been suggested that ecolabelling fish and seafood products that have been harvested appropriately will prompt consumer reaction to the issues and provide market incentives for better fisheries management. This study examines the pros and cons for those developing countries considering the introduction of ecolabelling. The appropriate balance between ecolabelling and other systems aimed at increasing the sustainability of fisheries management (such as co-management, property rights and ecosystem approaches) is also discussed.

TITLES OF RELATED INTEREST

Institutional Issues and Perspectives in the Management of Fisheries and Coastal Resources in Southeast Asia. M. Torell and A.M. Salamanca (eds.) 2001. ICLARM – The WorldFish Center Technical Report 60, 212 p.

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