The emergence and effectiveness of the Marine Stewardship Council

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ABSTRACT

This article examines the influence of patterns of emergence on the effectiveness of the Marine Stewardship Council (MSC) – a leading wild-capture fisheries certification program. Looking first at the origins and features of this program, direct effects are examined by describing the adoption of the scheme and the impacts of the fishery assessment process. In assessing broader consequences, the article examines patterns of adoption and certification effects that were not necessarily intended or anticipated. The article concludes that fisheries certification alone is unlikely to arrest the decline of fish stocks, and highlights the need for more research on the intersection of private and public efforts to address overfishing and environmental harm resulting from fishing.

KEYWORDS: effectiveness, environmental governance, fisheries certification, seafood labeling

1. Introduction

Certification schemes have emerged in recent years as particularly vibrant sources of standard setting and governance in the fisheries sector [1]. These certification schemes go beyond voluntary codes of conduct and self-regulatory modes of governance, in that they involve the development of prescriptive standards for certification, which require behavioral changes and independent verification of compliance. This article examines how patterns of emergence influence the effectiveness of the Marine Stewardship Council (MSC), a leading wild-capture fisheries certification program.

Understanding patterns of emergence is interesting in its own right, but it is also fundamental to assessments of effectiveness, because producers self-select into voluntary certification schemes. Certification schemes may, for example, have consequences that were not intended or anticipated by their initiators. One such consequence is the favoring of large-scale over small-scale operations, which benefits organizations that can take advantage of economies of scale. Another consequence is the favoring of developed-country over developing-country producers, because of their varying capacities to participate in these schemes. A distinction should be made, then, between the direct effects of a certification scheme and the broader consequences that flow from the emergence of that scheme [2]. Using a narrow definition of effectiveness, fisheries certification would be judged effective if it contributes directly to the resolution of problems it was created to address (overfishing, environmental harm resulting from fishing). Yet a broad conception of effectiveness would consider not only direct effects, but also environmental, social, and economic effects that were not necessarily intended or anticipated. This study examines both the narrow, problem-solving effectiveness and the broader consequences of fisheries certification.

2. The formation of the Marine Stewardship Council

2.1 Single-species eco-labels and seafood ranking guides

Social movement activism and consumer concern were key drivers behind the first eco-labeling initiatives in the fisheries sector. The inadvertent capture of non-target species (by-catch) such as marine mammals and sea turtles is a serious

problem in fisheries management—but it can be resolved or alleviated by adopting special fishing gear and methods. Mounting public concern over the substantial dolphin by-catch by tuna fisheries helped to prompt the formation of the first dolphin-safe labeling scheme by the Earth Island Institute, a US-based conservation organization [3]. The US government subsequently created its own dolphin-safe label under the Dolphin Protection Consumer Information Act (1990), which established rules for tuna catch and the labeling of tuna products. Another program was formed in 2001, when the Inter-American Tropical Tuna Commission (IATTC) supplemented restrictions on fishing to reduce dolphin by-catch with a certification procedure and an eco-label to mark tuna that were caught by IATTC member countries and vessels [4]. In order to reduce sea turtle mortality, single-species labeling schemes were also introduced, by issuing a turtle-safe label on shrimp products to guarantee that the fishing method would not kill sea turtles.

Another consumer-based approach introduced to improve fisheries governance was the development of seafood-ranking guides to help consumers chose fish from sustainably managed fisheries. The Audubon Seafood wallet card, intended to guide customers when ordering seafood in restaurants and buying fish in supermarkets, identified seafood choices according to traffic-light colors, green, yellow and red.[1] A similar initiative came from the Monterey Bay Aquarium, which distributed a Seafood Watch wallet card for consumers, identifying species from environmentally sound fisheries. In 2001, Sea Web, a US-based non-profit foundation, launched its Seafood Choice Alliance program, to bridge the gap between the conservation community and the seafood industry and to build a larger market for ocean-friendly seafood. This program followed on the heels of the "Give Swordfish a Break" campaign, a further example of the many single-species campaigns launched in the late 1990s and early 2000s.

[1] The Audubon Seafood card is no longer updated; consumers looking for information about the card on Audubon Society's webpages are encouraged to download the latest seafood guide from Monterey Bay Aquarium. http://seafood.audubon.org/ (Accessed 21 October 2008).

In spite of the merits of the single-species approach, it soon became clear that concentration on a single facet of environmental protection did little to address major environmental problems in the fisheries sector. The strong focus on individual species like dolphins and sea turtles seemed even to slow the development of a sector-wide approach to certifying sustainable managed wild-capture fisheries [5]. Likewise, by filling part of the space that a fisheries certification scheme might have occupied, the emergence of seafood-ranking guides might have slowed the development of a sector-wide approach [5]. Unlike certification schemes, seafood-ranking guides do not involve standard setting for sustainable fishing practices and third-party inspections of fisheries, a situation that raises questions about their effectiveness. A study commissioned by the Monterey Bay Aquarium concluded that the distribution of more than one million seafood wallet cards had neither brought about changes in the seafood market nor reversed the decline of targeted fish stocks [6]. The effectiveness of seafood awareness campaigns has also been questioned because of the widespread renaming and mislabeling of fish species in the seafood market. Some fish species are given more appetizing-sounding names in order to increase sales, and others are mislabeled as different species in the hope of concealing illegal or unsustainable fishing. In the United States, where 80% of seafood is imported, more than one-third of all fish are mislabeled [7], a situation that can easily mislead concerned but uninformed consumers into purchasing endangered or overfished species.

Although some environmentalists want the seafood-ranking approach to be the way of sensitizing consumers about their purchasing practices, others meant that only a sector-wide certification system, akin to the Forest Stewardship Council (FSC), could address major environmental problems in the fisheries sector. The success of FSC's sector-wide approach served as a major motivation for the World Wide Fund for Nature (WWF) to develop a similar certification scheme in the fisheries sector.

2.2 From a WWF-Unilever partnership to a fully independent organization

In response to the fisheries' management challenges, WWF teamed up with the global corporation, Unilever, at that time the world's largest purchaser of frozen fish, and established the MSC to improve fishery practices by linking fish production to fish trade. WWF wanted a partner able to facilitate the adoption of certified products among supermarket chains and other major retailers, and Unilever fitted the bill as a major player in the seafood business with a respectable sustainability policy [8]. The idea was to harness market forces to encourage behavioral change in fisheries [9].

The initiation of the MSC was inspired by the success of the FSC [10], and the similarity of their names and logos was no coincidence. Murphy and Bendell [11] describe how staff engaged in WWF's Endangered Seas Campaign learned informally of the FSC certification model from their colleagues, considered its application to fisheries, and decided to create a similar model for fisheries certification. Unilever had also witnessed the achievements of FSC certification in the forestry sector. The business-NGO partnership between WWF and Unilever was announced in August 1996. To fend off assertions that WWF and Unilever controlled the MSC, the MSC took several steps to strengthen its credibility and to establish itself as a fully independent organization. In March 1998, an international Board of Trustees was established to oversee the scheme. A few months later, in June 1998, another step toward full independence occurred when the founding partners' seed funding came to a natural end and the MSC was forced to seek funds from a range of private organizations, trusts, and charities.

The MSC founders also created a range of other governance bodies, committees, and working groups, some of which never became operational [12]. By July 1998, the MSC had become a fully independent non-profit organization that was seen by environmental organizations and the fishing industry alike as an essential step for gaining credibility as a neutral body in a multi-stakeholder industry [13]. Notwithstanding this milestone, stakeholders were concerned over what they claimed to be unwieldy bureaucratic structures and lack of transparent decision making in the organization [12]. In 2001, following a ten-month governance review and consultation process, MSC announced a governance reform to enhance openness and responsiveness to various stakeholders within and outside the fisheries sector [14]. The reform resulted in a more transparent governance structure, with the main governance bodies now being the Board of Trustees, a Stakeholder Council, a Technical Advisory Board, and national and regional working groups. The day-to-day operations of MSC are run by a London-based international secretariat, headed by a chief executive. In sum, the governance reform resulted in an inclusive multi-stakeholder governance structure, but in order to avoid the inertia and inefficiency sometimes experienced in the membership-based FSC program, it left ultimate decision-making authority to the Board of Trustees rather than the Stakeholder Council.

2.3 The comprehensiveness of the standards

Building on the UN Food and Agriculture Organization (FAO) Code of Conduct for Responsible Fisheries, the UN Fish Stocks Agreement and other international fisheries agreements, the principles and criteria of the MSC were developed through an inclusive consultation process between 1996 and 1999. This consultation, involving more than 300 organizations and individuals, included two expert drafting sessions and a series of international workshops in various regions around the world. The work began in September 1996 with a meeting in Bagshot, UK, followed by workshops in Australia, New Zealand, Germany, USA, Canada, South Africa, and Scandinavia [13]. Partly in response to criticism that MSC did not attend to the needs of fisheries in developing countries, further workshops to refine the principles and criteria were held in Latin America and Asia [5, 15].

As the work on the principles and indicators progressed, it became evident that the MSC had to draw boundaries around what should and should not be included [16]. In essence, the MSC had to decide if the principles and criteria only should address fishing operations and environmental issues, or if they also should address social and

development issues [5]. Much of this debate concerned the social aspects of fisheries management, particularly the needs of fishworkers and small-scale fisheries in developing countries [17]. Concerns were raised that the MSC was not suitable for certifying fisheries in developing countries, given the many millions of fishworkers involved in small-scale fisheries, the numerous fish landing centers, and the diversity of species and fishing operations in the developing world. One commentator feared that the numerous small-scale decentralized fisheries in developing countries would be discriminated against, because they would be unable to bear the costs of certification and would not have the capacity to implement certification requirements [16]. In rebuttal, Michael Sutton of the WWF's Endangered Seas Campaign argued that certification under the MSC could give Southern fisheries a competitive edge over their Northern counterparts, who had to contend with the collapse of many fish stocks in the North [15]. Whereas several commentators argued in favor of wide standards that encompassed both environmental and social issues [e.g. 18], the MSC decided to keep them narrower, focusing primarily on fishing operations and environmental issues in wild-capture fisheries. The three main principles of the MSC require (1) that the fishing activity must be at a sustainable level; (2) that fishing operations should be managed to maintain the structure, productivity, function and diversity of the ecosystem on which the fishery depends; and (3) that the fishery must meet all local, national and international laws and must have a management system that responds to changing circumstances and maintains sustainability.[2] These principles are supplemented by a number of more specific operational and management criteria, and independent certifiers must elaborate on the principles and criteria to meet regional and local fishery conditions.

The MSC also considered whether or not its standards should address fish farming. The significant growth of aquaculture production in the 1980s and 1990s had raised a number of environmental concerns, including the destruction of coastal habitats, nutrient and organic enrichment of recipient waters, negative population-level effects from escaped farmed organisms, eutrophication of lakes and coastal zones, veterinary drug residues in aquaculture products, and increasing demands on wild-capture fisheries for fishmeal to feed farmed species such as salmon [19]. Beginning in the late 1990s, concerns such as these prompted such organic certification organizations as the UK-based Soil Association and the German-based Naturland to introduce the organic labeling of approved fish-farming products [5]. Selling organic farmed fish in supermarkets could disadvantage non-labeled wild-caught fish, however. The MSC sought to provide a label for wild-caught fish and decided, therefore, that its standards should not address aquaculture production. Yet the issue of whether or not the MSC should expand into aquaculture certification has continued to be debated within the organization [5, 20].

2.4 The certification process

The client for certification may be a fishers' association, an industry association representing quota holders, a processor's organization, a government management authority, or any other stakeholder. The client in the certification of the Alaska salmon fisheries, for example, was the Alaska Department of Fish and Game [12]. A fishery must undergo a pre-assessment to determine if it can proceed to a full certification assessment. The pre-assessment is fully confidential, but sometimes clients release the outcome of the assessment on their website to show stakeholders needs for improvements that have been identified.[3] When the fishery receives the result of the pre-assessment, it decides if it should move toward a full assessment. To ensure transparency, the fishery must publish when it goes into the full assessment – in a local newspaper, for example – and notify all relevant stakeholders. By 2004, less than half of the fisheries that had undergone pre-assessment decided to proceed to a full assessment [21].

[2] www.msc.org

[3] Alice McDonald and Daniel Suddaby, MSC Fishery Assessment Officers, pers. comm. 23 May 2006.

In a full assessment, the certifier appoints a panel comprising a fishery stock assessment expert, an ecosystem expert, and a fishery management expert, who ascertain if a fishery meets the MSC certification requirements. The panel develops a number of performance indicators allowing comparisons with MSC criteria; it collects data about the fishery and consults stakeholders; it scores the fishery against the indicators and issues a preliminary report for peer review and public comment. Throughout this process, stakeholder input provides the whole process with robustness. Any stakeholder can provide input into the process, and the assessment team must demonstrate that these comments have been considered in its final report. The assessment team will also arrange a number of meetings with various stakeholders throughout the process.[4] At the culmination of this process, the certifier decides if a fishery is to be certified. Stakeholders who have been involved in the assessment may object to the certifier's decision, however, in which case a complaints procedure is activated. The MSC certificate is valid for five years, and the fishery is subject to annual third-party audits of fishing operations. Before the end of the five-year period, the fishery must undergo a new major assessment to renew its certificate.

A so-called chain-of-custody assessment must be conducted for the entire fish and fisheries product supply chain in parallel with or following the assessment of the fishery. The purpose of this assessment is to track the origin of the products through every stage of the supply chain, to ensure end consumers that products carrying the MSC logo originate with a certified fishery. In order to use the logo on a product, the client undergoing certification must hold a licensing agreement with MSC. Because supply chains for seafood products are diverse, and are typically lengthy and complex, chain-of-custody assessments can be challenging [12]. Provided that clients obtain a licensing agreement, they can use the logo on material other than a product containing seafood ("off-product") without having a chain of custody certificate, thus permitting companies such as restaurants and retailers to make general claims about their support for MSC [22].

[4] Alice McDonald and Daniel Suddaby, MSC Fishery Assessment Officers, pers. comm. 23 May 2006.

3. Government and industry responses to the MSC

In spite of MSC's linkage to the FAO Code of Conduct and other fisheries agreements, and given the long history of international fisheries governance, certain European governments have been dubious about the scheme and have questioned the right of non-state bodies to govern common-pool resources such as fish stocks [8]. Seeing the MSC as an attempt to create a private transnational management regime beyond national jurisdiction, these governments argued that non-state actors had neither the necessary experience nor the mandate to govern fisheries. Unlike most standardization bodies, MSC allocates no preferred position to governments, which they treat like all other stakeholders – NGOs, fishers, producers, and retailers, for instance.

In 1996, partly in response to the creation of the MSC, the Nordic Council of Ministers formed a Nordic project group mandated to assess standards for sustainable fish production [5]. Based on its view that the MSC was lacking credibility within the fisheries sector and among governments [23] the Nordic Council subsequently became a central proponent of an FAO-led labeling scheme [24]. At the initiative of the Nordic countries, FAO's Committee of Fisheries (COFI) discussed the practicality and feasibility of fishery certification and labeling at its biannual meetings in 1997 and 1999, and an FAO technical consultation examined the matter. At neither meeting, nor through consultation, was agreement reached about the course of action that FAO should take. Led by Mexico, the Latin-American countries argued that eco-labeling in fisheries should be dealt with exclusively under the auspices of the WTO rather than under FAO. Based on their experiences with US eco-labeling provisions to protect dolphins and sea turtles, developing countries were deeply skeptical of an FAO-led labeling scheme, which they believed would limit market access for their fisheries [24]. Mexico, for example, had experienced a plunge in tuna exports to the United States following the US regulations on dolphin-

safe labeling. Agreement on non-binding technical guidelines for labeling thus seemed more likely than did agreement on any labeling scheme with government involvement. After another COFI consideration of the issue in 2003, experts and governments drafted a set of guidelines for fish and fishery products labeling guidelines during a series of FAO expert and technical consultations. These guidelines, issued by FAO in 2005, stated that fisheries eco-labeling programs should include objective third-party fishery assessment using scientific evidence; transparent processes with extensive stakeholder consultation and opportunities for complaints and rules for adjudication; and standards based on the sustainability of target species, ecosystems and management practices [25]. Although the guidelines fell short of prescribing mandatory requirements for the use of eco-labels, they represented a step toward increased government influence over non-state labeling schemes. In essence, the creation of labeling guidelines was an effort by certain governments to regain control of an issue area predominated by non-governmental actors.

In March 2005, the MSC issued a statement welcoming the FAO guidelines [26]. In order to comply fully with the guidelines, the program had to separate the standard-setting and accreditation functions. The MSC thus outsourced accreditation decisions to Accreditation Services International – an independent organization that also accredits third-party certifiers for the FSC. Furthermore, it was obliged to modify its procedure for receiving and responding to objections to fishery assessments. The MSC reported that both these changes were implemented by September 2006 [27]. In sum, the FAO guidelines seem to have consolidated MSC's position as the leading eco-labeling scheme for wild-capture fisheries, making it more difficult for potential competitors to create a scheme with equally strong requirements.[5] Nonetheless, some MSC competitors surfaced in response to the scheme.

As mentioned previously, fishers and fisheries industries in several countries were initially skeptical of the MSC because of Unilever's central role in creating the scheme. Swedish fishers rejected MSC certification and decided instead to partner with the Swedish organic labeling organization, KRAV, to develop standards for fisheries certification. Focusing primarily on organic standards, KRAV had no experience in developing standards for wild-capture fisheries, but it was regarded as a well-known labeling organization that could organize the standard-development process, while lending credibility to the label [28]. The process began in 2000, when KRAV offered to coordinate the work that was being undertaken with standards, which until then had lacked effective coordination and leadership. From there, the work progressed quickly, with a final standard proposal for the eco-labeling of wild-capture fish and shellfish being presented in 2003 and approved by KRAV in 2004. Although a few Swedish shrimp and herring fisheries have been certified in accordance with the standard, KRAV remains a national scheme that does not challenge MSC's position as the only global fisheries certification scheme.

In the United States, an industry-led initiative was formed in 1997, when the National Fisheries Institute, a trade association of the US commercial fishing industry, launched its "principles for responsible fisheries". Although the initiative was intended as an alternative to the MSC [29], it is primarily a guide for industry practices rather than a certification program. In short, the MSC remains the only comprehensive certification program for wild-capture fisheries, but its decision to focus only on wild capture has enabled the formation of a number of aquaculture initiatives [5, 30].

4. Patterns of adoption

By the end of 2008, 38 fisheries were certified and another 88 were in the assessment stage, accounting for merely 7% of all wild-caught seafood sales [31]. One fishery – Alaska pollock – accounted for approximately 60% of the volume of MSC certified fish. Following the certification of this fishery, the MSC has become a major player in the global whitefish market (hoki, hake, and pollock), supplying about one-fifth of the traded volume [32].

[5] Rupert Howes, Chief Executive MSC, pers. comm. 23 May 2006.

It is essential, however, to consider patterns of adoption in assessments of the environmental impacts of certification programs [2]. Because participation in certification schemes is voluntary, it is possible that only those producers who face minor compliance costs will opt in. If producers who face substantial compliance costs were to opt out of certification schemes, the net effects of certification initiatives would be low. This selection problem is evident in fisheries certification; those fisheries that currently meet the MSC criteria share several key characteristics and differ from the majority of the world's fisheries. Two types of fisheries dominate the scheme: large-scale and small-scale fisheries in developed countries. There are few certified intermediate-sized fisheries [33]. As observed by Hoel [32], current certification requirements may favor fisheries in industrial coastal states because they can afford the certification costs and have the means to participate in the assessment process. In addition to uncertainty about the market benefits accruing from certification, fisheries considering whether or not to engage in a pre-assessment often perceive the cost of the certification process as a major obstacle.[6] The full certification process can be time consuming, costly and demanding for the fishery undergoing assessment, as seen in the four-year assessment of Alaska pollock [10]. But more commonly, the assessment process lasts about 12 months.[7] In order to comply with the standard, fisheries must undergo assessment and logo licensing costs. In addition, they must often implement a number of costly changes in their operation – changing gear, reducing bycatches of non-targeted species, and disbanding fishing units, for example – which may far exceed the short-term costs of the assessment process [32].

Kaiser and Edward-Jones [33] examined the key features of the first eleven MSC-certified fisheries. They found that those fisheries are highly selective of their target species; have stocks that occur within known areas for which there are exclusive national access rights; tend to have limited access; are well regulated and enforced; and are often co-managed by governments, scientists, and fishers [33]. In contrast, most fishers in most regions of the world have no significant input into the management process; they share the fish resources with multiple fishers from other nations or with unassociated fishers and have little control over the setting of fishing quotas [34]. Many fishers, in fact, are excluded from even considering MSC certification because of the actions of others that are beyond their control [33]. This feature of open access resources effectively excludes fisheries that meet most of the MSC criteria, but share the fish resources with other fisheries that do not fish sustainably. One solution to this problem could be the formation of more fishing cooperatives, to enable collective action and co-management of the fish resources [35]. The formation of fishing cooperatives, in turn, seems to require some form of government intervention to force fishers to work collectively and assume management responsibility for defined areas of the sea [33, 35]. Given the nature of the fish resources, government intervention is also necessary to enable certification of a number of fisheries that currently fall short of the MSC criteria. In essence, because most fisheries are under the control of government bodies, fish stocks require government intervention for their conservation. One option for fisheries stakeholders, then, is to work with government regulators to change regulatory frameworks in ways that would allow certification of fisheries that do meet the MSC criteria [36]. Similarly, if governments believe that certification is vital for the economic viability and market access of the fishing industry, they may take the initiative to change management rules to allow for the certification of fisheries [32].

As of 2008, only three fisheries in developing countries have been certified, and the adoption of MSC-labeled products is largely limited to Europe, North America, and Japan. These patterns of adoption have caused concern that labeling may restrict market access of non-labeled products from developing countries, with potentially severe consequences for their producers. Sometimes portrayed as "eco-imperialism", developing countries increasingly see labeling as a de facto barrier to trade, and have voiced their concerns in such WTO deliberations as those of the Committee on Trade and Environment [10] and other such international organizations as the UN Conference on Trade and Development [2, 37]. Also considering that most

[6] Rupert Howes, Chief Executive MSC, pers. comm. 23 May 2006.
[7] Alice McDonald and Daniel Suddaby, MSC Fishery Assessment Officers, pers. comm. 23 May 2006.

of the seafood in developing countries is consumed locally, in markets with little or no interest in eco-labeling, fisheries certification probably has limited potential to spread among the fisheries in these countries. The Asian seafood markets, by far the world's largest, have yet to see any breakthrough in seafood labeling. Given the current patterns of standards adoption and market adoption, fisheries certification would be more likely to modify the behavior of fishers in developed than in developing countries. In sum, current MSC certification requirements seem to favor two types of fisheries: small-scale fisheries that are relatively easy to certify because of limited access, and large-scale fisheries that are well regulated and can afford the comprehensive assessment process.

5. The environmental effects of the fisheries assessment process

The ability of certification programs to modify fisheries practices to create better environmental outcomes ultimately depends on the assessment and certification processes. Analysis of environmental achievements by MSC certifications have yielded mixed results. In 2006, the MSC, in collaboration with a UK-based fisheries research consultancy, conducted a self-study of environmental gains resulting from its certification program [38]. The study found a number of process improvements in MSC-certified fisheries that could lead to enhanced marine biodiversity conservation. Yet, there was only one major ecological improvement related to the MSC-certification process – a reduction in endangered seabird by-catch in the South Georgia Patagonian toothfish fishery – which was achieved in preparation for the assessment process. Reduced sea lion by-catch was identified in Western Australia's rock lobster fishery, but it was not directly related to the certification of the fishery. Although MSC certification did contribute to reducing fur seal by-catch in the New Zealand hoki fishery, it proved to be a temporary improvement [4, 38].

Ward [4] investigated the distribution of all scores in the first 22 certified fisheries for each MSC principle. He found that one of the two main MSC certifiers systematically awarded higher scores for Principle 2 than did the other main certifier, indicating that "the poorly expressed Principle 2 criteria are interpreted differently by these two certifiers, and applied differently in the various fisheries" [4, p. 174].[8] He concluded that the MSC certification program has been unable to demonstrate major achievements in marine biodiversity conservation, reaffirming earlier contentions that the program has failed to contribute significantly to resolving environmental problems in the fisheries sector. Jacquet and Pauly [40, p. 310], for example, claim that "[t]he MSC may create an incentive for industry to foster effective stock management, but has so far failed to demonstrably arrest the decline of fish stocks". Others have reached similar conclusions [e.g. 17, 33, 41].

In addressing the ability of current seafood labeling programs to achieve better environmental outcomes, Ward [4] questioned how vested business interests between certifiers and their clients could result in flexible interpretations of the principles and criteria. Vested business interest in successful certification outcomes is a well-known challenge for credible forestry auditing [42, 43]. The competition among certifiers to secure assessment contrasts may favor certifiers that are client-friendly in their assessments, thus lowering the bar for passing the assessments. Similarly, the cost of certification may create the incentive to use certifiers that can provide relatively cheap assessments. Although the flexible interpretation of principles and criteria is explicitly accepted by the MSC program, which requires certifiers to develop indicators and benchmarks for each fishery under assessment, the variation in assessment outcomes among certifiers could, in the long run, undermine trust in fisheries certification. In July 2008, the MSC introduced a new fisheries assessment methodology to address this problem.

Forest auditing is relatively straightforward, because auditors can usually observe the direct effects of forestry operations in on-the-ground inspections. The nature of fish resources, on the other hand, renders them more of a challenge to credible auditing. There are often multiple access

[8] The criteria in Principle 2 relating to conservation issues have been criticized for their broad and highly aspirational terms, which render them unlikely to be achievable by any wild-capture fishery [4, 39].

rights to shared fish resources, and many fish stocks are straddling and highly migratory. The absence of easily observable effects of non-compliance and the non-selective nature of many fishery harvest techniques further complicate the assessment process [33]. Characteristics of the fish resource and fish governance make it difficult therefore to set standards that would lead to environmental improvements [4]. But as Leadbitter and Ward [44] have discussed, it is possible to enhance the robustness of fisheries assessment systems, thereby avoiding lax assessment processes. As in the forestry sector, stringent and comprehensive assessment criteria are likely to facilitate credible auditing, whereas lax or unclear criteria are likely to have the opposite effect [43].

Fisheries certification may also have consequences that were not necessarily intended or anticipated. Sutton [39] describes how fishery managers in Western Australia's rock lobster fishery used the achievement of MSC certification to prevent the introduction of marine reserves in Western Australian waters, rejecting the need for fishing sanctuaries on the grounds that the fishery is certified. Another unintended consequence of certification, discussed previously, is the favoring of fisheries in developed countries at the expense of fisheries and fishers in developing countries, where the costs of preparing for, paying for, and participating in comprehensive certification assessments are often unaffordable. In addition, because many developing countries lack reliable scientific data on the state of their fisheries, they are excluded from even considering certification. The MSC has recognized this problem and is developing guidelines for the assessment of small-scale and data-deficient fisheries – the scheme's current keystone initiative in the developing world [45]. Even so, the significant MSC under-representation of fisheries in the developing countries could challenge the credibility of the scheme, again highlighting the need to develop measures that would increase the participation of fisheries in developing countries.

6. Conclusions

A number of process improvements in MSC-certified fisheries indicate that certification could lead to enhanced marine biodiversity conservation. But certification alone is unlikely to resolve the dire problems of overfishing and depleted fish stocks. Rather, government-sanctioned marine reserves; rules restricting access to the fish resources; stringent distributive schemes; and the curtailment of illegal, unregulated, and unreported fishing must be part of the solution. The regional and global scale of overfishing and depleted fish stocks is a significant challenge to certification as a tool for addressing such problems that are rarely contained within a single fishery. Moreover, patterns of adoption continue to raise questions about effectiveness. Being highly selective of their target species, well regulated and enforced, and with limited access rights, certified fisheries differ from the majority of the world's fisheries. Fisheries in developing countries are under-represented in the program.

Although the MSC has been operational for more than a decade, it may still be too early to identify the environmental impacts of certification on marine ecosystems and oceans. At this early stage of fisheries certification, perhaps the least tentative conclusion should be that management processes in certified fisheries are becoming increasingly open and accountable to a wide range of stakeholders [41]. With respect to the environmental effects of fisheries certification, a critical area of study is the intersection of private and public efforts to resolve the problem of overfishing and decrease the environmental harm resulting from fishing. More research is needed on the interplay between certification on the one hand and, on the other hand, governmental, intergovernmental, and civil society efforts to address the environmental challenges in the fisheries sector.

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References

[1] Ward T, Phillips B, editors. Seafood labelling: principles and practice. Oxford, UK: Wiley-Blackwell; 2008.

[2] Auld G, Gulbrandsen LH, McDermott CL. Certification schemes and the impacts on forests and forestry. Annual Review of Environment and Resources 2008; 33: 187–211.

[3] Teisl MF, Roe B, Hicks RL. Can a label tune a market? Evidence from dolphin safe labelling. Journal of Environmental Economics and Marketing 2002; 43: 339–59.

[4] Ward TJ. Barriers to biodiversity conservation in marine fishery certification. Fish and Fisheries 2008; 9: 167–77.

[5] Auld G. The origins and growth of social and environmental certification programs in the fisheries sector. Paper read at the 11th Annual Conference of the International Society for New Institutional Economics, Reykjavik, Iceland; June 21–23, 2007.

[6] Seafood Watch Evaluation. Summary Report. Saltspring Island, US: Quadra Planning Consultants Ltd. and Galiano Institute for Environmental and Social Research; 2004.

[7] Jacquet JL, Pauly D. Trade secrets: renaming and mislabeling of seafood. Marine Policy 2008; 32: 309–18.

[8] Gulbrandsen LH. Creating markets for eco-labelling: are consumers insignificant? International Journal of Consumer Studies 2006; 30 (5): 477–89.

[9] Sutton M. Marine Stewardship Council: new hope for marine fisheries. *Samudra* 1996; 15: 15–18.

[10] Gulbrandsen LH. Mark of sustainability: challenges for fishery and forestry eco-labeling. Environment 2005; 47 (5): 8–23.

[11] Murphy DF, Bendell J. In the company of partners: business, environmental groups and sustainable sevelopment post-Rio. Bristol, UK: The Policy Press; 1997.

[12] May B, Leadbitter D, Sutton M, Weber M. The Marine Stewardship Council: background, rationale and challenges. In: Phillips B, Ward T, Chaffee C, editors. Eco-labelling in fisheries: what is it all about? Oxford, UK: Blackwell; 2003. p. 14–33.

[13] Fowler P, Heap S. Bridging troubled waters: the Marine Stewardship Council. In Bendell J, editor. Terms for endearment: business, NGOs and sustainable development. Sheffield, UK: Greenleaf; 2000. p. 135–48.

[14] Marine Stewardship Council. MSC announces new governance structure. Press release July 27, 2001.

[15] Sutton M. Marine Stewardship Council: an appeal for co-operation. Samudra 1998; 19: 26–30.

[16] O'Riordan B. Marine Stewardship Council: who's being seduced? Samudra 1997; 18: 10–11.

[17] Ponte S. The Marine Stewardship Council and developing countries. In: Ward T, Phillips B, editors. Seafood labelling: principles and practice. Oxford, UK: Wiley-Blackwell; 2008. p. 287–306.

[18] Mathew S. Marine Stewardship Council: when sandals meet suits. *Samudra* 1998; 19: 31–5.

[19] FAO. The state of world fisheries and aquaculture 2006. Rome, Italy: FAO; 2007.

[20] Marine Stewardship Council. MSC not to develop aquaculture standard – MSC Board Statement. Press release November 20, 2006.

[21] Bridgespan Group. Fishery certification: summary of analysis and recommendations. Boston: Bridgespan Group; 2004.

[22] Highleyman S, Mathews Amos A, Cauley H. An independent assessment of the Marine Stewardship Council. Draft Report by Wildhavens, prepared for Homeland Foundation, Oak Foundation, and the Pew Charitable Trust. Bellingham, WA: Wildhavens; 2004.

[23] Stokke OS. Labelling, legalisation and sustainable management of forestry and fisheries. Paper read at the fifth Pan-European International Relations Conference, The Hague, Netherlands; September 9–11, 2004.

[24] O'Riordan B. Sticky labels. Samudra 1998; 21: 22–5.

[25] FAO. The FAO guidelines for the ecolabelling of fish and fisheries products from marine capture fisheries. Rome, Italy: FAO; 2005.

[26] Marine Stewardship Council. MSC welcomes FAO guidelines on marine eco-labelling. Press release March 31, 2005.

[27] Marine Stewardship Council. Leader in fishery certification and eco-labelling annouces 100% consistency with UN guidelines. Press release September 26, 2006.

[28] Boström M. Establishing credibility: practicing standard-setting ideals in a Swedish seafood-labelling case. Journal of Environmental Policy and Planning 2006; 8 (2): 135–58.

[29] Carr, CJ, Scheiber HN. Dealing with a resource crisis: regulatory regimes for managing the world's marine fisheries. University of California International and Area Studies Digital Collection, Volume 1; 2002. Available at <http://repositories.cdlib.org/uciaspubs/editedvolumes/1/3>.

[30] Lee D. Aquaculture certification. In: Ward T, Phillips B, editors. Seafood labelling: principles and practice, Oxford, UK: Wiley-Blackwell; 2008. p. 106–33.

[31] Ward TJ, Phillips B. Ecolabelling of seafood: the basic concepts. In: Ward T, Phillips B, editors. Seafood labelling: principles and practice. Oxford, UK: Wiley-Blackwell; 2008b. p. 1–37.
[32] Hoel AH. An effective conservation tool? ecolabelling and fisheries. In Aasche F, editor. Primary industries facing global markets. The supply chains and markets for Norwegian food and forest products. Oslo: Universitetsforlaget; 2006. p. 347–73.
[33] Kaiser MJ, Edwards-Jones G. The role of ecolabeling in fisheries management and conservation. Conservation Biology 2006; 20(2): 392–98.
[34] Kaplan I, McCay BJ. Cooperative research, co-management and the social dimensions of fisheries science and management. Marine Policy 2004; 28: 257–58.
[35] Gelcich S, Edward-Jones G, Kaiser MJ. Importance of attitudinal differences among artisanal fisheres with respect to co-management and conservation of marine resources. Conservation Biology 2005; 19: 1–11.
[36] Leadbitter D, Guillermo G, McGilvray F. Sustainable fisheries and the East Asian seas: can the private sector play a role? Ocean and Coastal Manangement 2006; 49: 662–75.
[37] United Nations Conference on Trade and Development. Workshop on environmental requirements and market access for developing countries: how to turn challenges into opportunities. Geneva, Switzerland: UNCTAD; 2007.
[38] Agnew D, Grieve C, Orr P, Parkes G, Barker N. Environmental benefits resulting from certification against MSC's principles and criteria for sustainable fishing. London: MRAG UK and Marine Stewardship Council; 2006.
[39] Sutton D. An unstatisfactory encounter with the MSC – a conservation perspective. In: Phillips B, Ward T, Chaffee C, editors. Eco-labelling in fisheries: what is it all about? Oxford, UK: Blackwell; 2003. p. 114–9.
[40] Jacquet JL, Pauly D. The rise of seafood awareness campaigns in an era of collapsing fisheries. Marine Policy 2007; 31: 308–13.
[41] Ward TJ, Phillips B. Anecdotes and lessons of a decade. In: Ward T, Phillips B, editors. Seafood labelling: principles and practice. Oxford, UK: Wiley-Blackwell; 2008. p. 416–35.
[42] Ghazoul J. Barriers to biodiversity conservation in forest certification. Conservation Biology 2001; 15: 315–7.
[43] Gulbrandsen LH. Overlapping public and private governance: can forest certification fill the gaps in the global forest regime? Global Environmental Politics 2004; 4 (2): 75–99.
[44] Leadbitter D, Ward T. An evaluation of systems for the integrated assessment of capture fisheries. Marine Policy 2007; 31: 458–69.
[45] Howes R. The Marine Stewardship Council programme. In: Ward T, Phillips B, editors. Seafood labelling: principles and practice. Oxford, UK: Wiley-Blackwell; 2008. p. 81–105.