EVOLUTION OF SEAFOOD SUSTAINABILITY CERTIFICATION STANDARDS: KEY TRENDS & CONSIDERATIONS

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1.0 Introduction

Capture fisheries are considered essential for global food security and seafood demand continues to rise with population growth. This increase in demand has been met with significant concerns over the status of global fish stocks given some of the stock collapses witnessed over the past few decades. The Food and Agricultural Organization (FAO) of the United Nations (UN) estimates that approximately 25% of global fish stocks are overexploited, depleted or recovering from depletion. Further to this it states that an additional 52% of stocks are fully exploited with little to no potential for further increases (FAO, 2010). While these statistics relate to 2008 production numbers they have been relatively stable for the past decade or more despite international efforts to improve the overall sustainability of capture fisheries (FAO, 2010).

Unfortunately the consequences of unsustainable fishing practices are not limited to environmental and social issues. A 2008 study conducted by the World Bank (WB) and the FAO estimated that the worlds fishing fleets lose approximate $50 billion per year due to depleted stocks and poor management. The report entitled 'The Sunken Billions' indicate that reforming fisheries management could rebuild fish stocks and improve the overall profitability of the global seafood industry (World Bank, 2008).

Unfortunately for Canadians, the poster child for global overfishing is the northern cod fishery in Atlantic Canada which culminated in the 1992 groundfish moratorium and the collapse of one of the most vibrant and historic marine fisheries in the world. While a number of factors contributed to this collapse, there is little doubt that the highly irresponsible buildup of capacity - both domestically and internationally – played a major role. Ultimately the decision makers of that generation failed to recognize the principle of sustainability which was developed and globalized by the Bruntland Commission of the United Nations. It defined sustainable development as *'development that meets the needs of the present without compromising the ability of future generations to meet their* own need '(WCED, 1987).

In recent years the accountability structures and drivers of seafood sustainability have changed significantly. The result of the global stock collapses was a loss of faith in the ability of sovereign governments and regional fisheries management organizations (RFMOs) to successfully manage fish stocks. Essentially they lost their moral authority

to lead. This has led to the emergence of new leadership from the environmental community in an attempt to fill the voids left by failed management regimes.

This has also meant leveraging consumer demands and market forces to obtain better fisheries management. This process has taken the form of sustainability certification regimes or ecolabels. These are market-based systems encouraging the purchase of products that demonstrate that they have been harvested in a sustainable manner, represented to consumers in the form of package labels. This approach may be the most effective market strategy to harness consumer buying power to promote biodiversity as well as social and economic sustainability.

The most successful ecolabel programme to emerge to date is the Marine Stewardship Council (MSC). The market incentives created by the MSC have resulted in the first major step towards a 'market-based' solution to the global overfishing crisis. In short, the program recognizes and rewards sustainable fishing practices and certifies products that meet their robust environmental standard.

Major European and North American retailers have committed to only sourcing seafood certified to a third party standard such as the MSC or equivalent, including industry leaders such as Walmart, Marks & Spencer, Loblaws, etc. Today the MSC has more than 10,000 labeled products globally (MSC, 2011). Additional certification regimes are now emerging to further expand and entrench this movement.

This has contributed to the development of sustainable seafood sourcing policies among/by major retail and food service agencies. This market access-based approach to seafood sustainability appears to be going hand in hand with new efforts by governments responsible for resource management and RFMOs, and positively influencing global seafood sustainability.

This report will investigate the evolution of seafood sustainability certification standards over the past decade. This will include the history of standard development, an overview of existing standards, and the identification and analysis of the key challenges and trends that have emerged more recently. The report will conclude with an assessment of anticipated future directions in the movement with a particular focus on transparency, efficiency, value and overall impact on global seafood sustainability.

2.0 History of Seafood Sustainability Standard Development

2.1 Definition of Sustainability

To gain an understanding of the evolution of seafood sustainability standard development it is important to understand the origin of the principle of sustainability as a key pillar of this movement. For much of human history the concept of sustainability had limited meaning as our marine resources were commonly believed to be inexhaustible (Huxley, 1883). However with the massive growth in the human population and advances in technology sustainability has become one of the most commonly used terms in society today. For example a simple Google search of the word 'sustainability' will yield over 116 million results (www.google.ca).

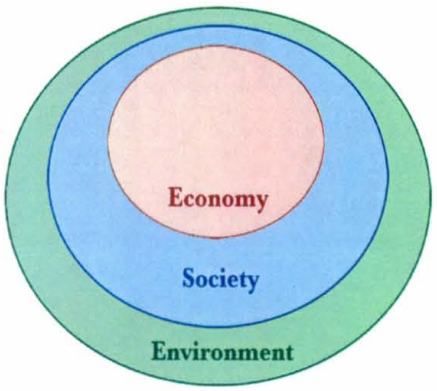
The most widely used and quoted definition of sustainability comes from the 1987 Brundtland Commission of the United Nations. The Commission was convened in 1983 to address the rapidly growing concerns about the impact of development on society, the economy and the environment. The commission defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987).

Within this definition the commission also cited two key concepts.

- the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
- the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future need (WCED, 1987).

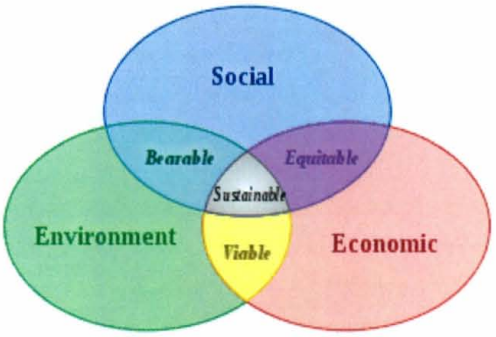
The 2005 World Summit expanded upon this definition by stressing that the successful achievement of sustainable development will require the reconciliation of the social, economic and environmental demands or the 'three pillars of sustainability' as they defined it (UNGA, 2005). Figures 1 and 2 depict this relationship and the importance of balancing the three pillars if we are to achieve true sustainable development.

Figure 1: Three Pillars of Sustainability



Source: Scott Cato, 2009

Figure 2: Three Pillars of Sustainability



Source: Adams, 2006

While these definitions and principles of sustainable development have tremendous merit, the practical implementation both on micro and macro scales often remain elusive. In fact the environmental community has held as a common criticism the fact that the word 'sustainability' has become a severely overused buzz word by various stakeholders with limited tangible results achieved in many cases. While there is some basis for this criticism it is also important to point out that these are the foundation pillars upon which many of the modern sustainability standards have been built upon.

2.2. Global Overfishing

Over the past 50 years significant concerns have been raised over the status of global fish stocks. Over this time period we have seen a systematic collapse of a number of major fish stocks around the world and mankind has not shown an ability to sustainably and responsibly manage fisheries resources (Walters, 1986; Cole-King, 1993; Acheson, 1981; Ludwig et al., 1993). Unfortunately the poster child for global overfishing is the failure of the northern cod fishery in Newfoundland and Labrador culminating in the moratorium of 1992. The end result of this ecological disaster was the displacement of more than 30,000 fishermen and the erosion of one of the most vibrant marine ecosystems in the world.

The story of the decision making process leading up to the 1992 groundfish moratorium is an example of the failure of fisheries management across the globe. In 1977 Canada extended its fisheries jurisdiction to 200 nautical miles as a response to global overfishing and stock collapse at the time. That expansion contributed to

significant optimism regarding the potential – later realized - for expansion of the Canadian industry both in terms of harvesting and processing capacity. Also fueling this optimism was the expectation the groundfish TAC's would increase significantly in the 1980's providing tremendous growth potential for the Canadian fleet. In an address to the Fisheries Council of Canada in 1978 then-Federal Fisheries Minister Romeo LeBlanc confronted the issues surrounding the rising expectations in the industry and the dangers of significant industry capacity expansion:

> 'The present groundfish fleet of larger vessels has the capacity to take half again its present catch, and to provide better incomes – if we increase the fish in the water and the catch rates: if we do it the other way around – increase the fleet first – we are like a man with an exhausted woodlot, who instead of planting more trees to get more growth, spends all his money on more chain saws to cut the shrubs... I would like to see you join me in resisting suggestions that fleets should be vastly expanded, that plants should be vastly enlarged – in other words, to resist the temptation of exaggerated expectations. I see no faster road to disaster than forgetting the very simple lesson that the biology cannot keep up with the technology – that the wealth of the oceans cannot yet match the greed of man. (Parsons, 1993)'.

Despite the existing situation of overcapacity and the warnings outlined at the time by the minister, a number of vertically integrated companies in Newfoundland and Nova Scotia were successful in lobbying the federal government for a significant expansion in capacity in both the harvesting and processing sectors. In Newfoundland the number of registered fish plants increased from 147 in 1977 to 225 in 1981 (Parsons, 1993).

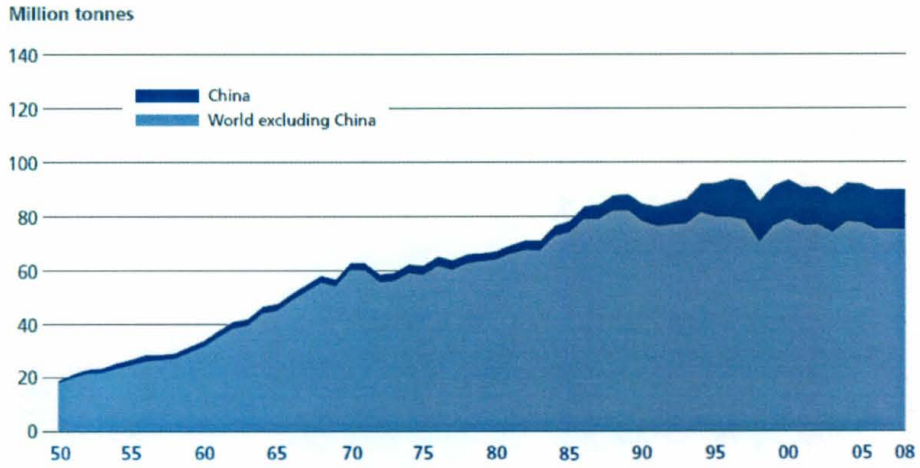
It can be argued that the highly irresponsible buildup of capacity during this time period sparked a series of events that led to the collapse and eventual moratorium in 1992. While there was a relentless lobby effort leveled by industry groups and other constituents, ultimately it was the decision of the federal government to allow this capacity expansion to occur.

The end result of the global stock collapses during this time period was a complete loss of fate in the ability of sovereign governments and regional fisheries management organizations (RFMO's) to successfully manage their fish stocks. As an important footnote to this story the World Wildlife Fund (WWF) and Unilever cited the Grand

Banks groundfish collapse as a major impetus in its efforts to establish the Marine Stewardship Council later that decade. This was the first major step towards a 'market access' based solution to the global overfishing crisis.

Since the groundfish collapse of the early 1990's global capture fisheries production has been somewhat stable (figure 3). Global production in 2008 hovered around 90 million tones with a first-sale value of $93.9 billion US. As figure 3 indicates China has been a significant factor in production representing about 15 million tones of production in 2008 which makes it by far the top producing country (FAO, 2010).

Figure 3: Global Capture Fisheries Production

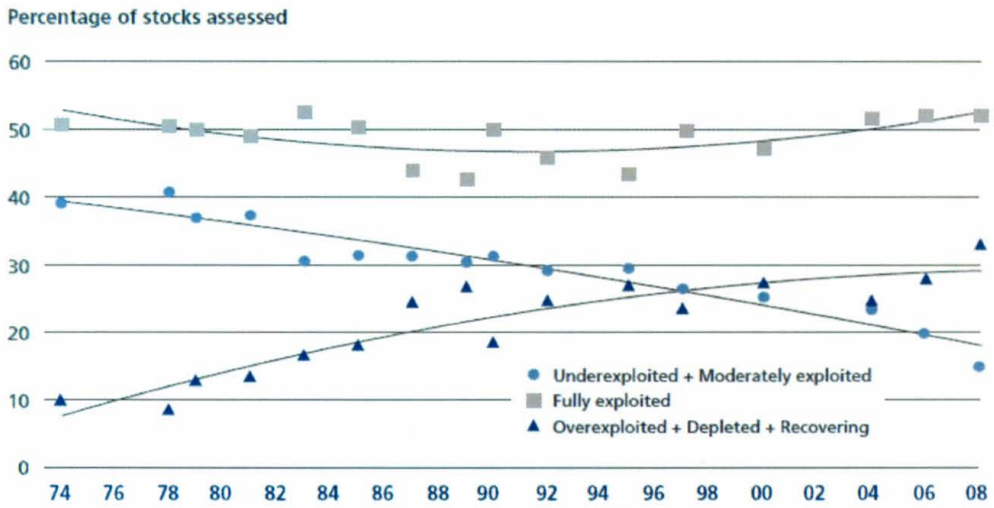


Source: FAO, 2010

While some significant improvements have been made to the status of global fish stocks over the past decade issues remain. FAO scientists regularly produce reports on the state of world fisheries. The most recent report provides the following key statistics:

- 52% of fish stocks are fully exploited;
- 20% are moderately exploited;
- 17% are overexploited;
- 7% are depleted;
- 1% is recovering from depletion; (see figure 4)(FAO, 2010)

Figure 4: Global Trends in the State of World Marine Stocks Since 1974



Source: FAO, 2010

These statistics lead to a general conclusion that production from world capture fisheries will not increase unless management measures are put in place to reverse these trends. Closer to home in the Northwest Atlantic we have seen positive trends in some key fisheries such as Greenland halibut, yellowtail flounder and haddock. However, the dominant historical species, cod, has yet to show any significant sign of recovery in this region (FAO, 2010).

In spite of these trends demand for seafood remain high globally. In fact world fish trade has increased from $8 billion US in 1976 to $101.8 billion in 2008 (including aquaculture) (FAO, 2010). This trend is expected to continue in the years to come given the perceived health benefits of seafood consumption and the continued rapid growth in the world's population, to name two key driving forces. While aquaculture production has been growing rapidly to keep pace with this demand there is little doubt that this is creating increased pressure on capture fisheries as well. It is within this environment of concern that we have seen the rapid growth in sustainability certification regimes as a potential market access tool to curtail concerns related to global overfishing.

2.3 FAO Code of Conduct on Responsible Fishing

The Food and Agriculture Organization of the United Nations has a global mandate to ensure global food security and by doing so maintain and improve the economic and

social wellbeing of all citizens. The Fisheries and Aquaculture Department of the FAO has its mission:

> "To strengthen global governance and the managerial and technical capacities of members and to lead consensus-building towards improved conservation and utilization of aquatic resources"(http://www.fao.org).

With the backdrop of recent collapses of major world fisheries (i.e. Atlantic cod) as its guide the FAO led a dialogue that resulted in the establishment of the FAO Code of Conduct on Responsible Fisheries in 1995. The code development was truly a global initiative with more than 140 states involved in the drafting; it was eventually adopted by all FAO member states on October 31, 1995 (FAO, 1995).

The code itself contains a series of principles and best practices promoting the responsible and sustainable use of fisheries resources. In hindsight the code has proven to be a visionary document in guiding the development of recent policies related to the precautionary and ecosystem approaches to fisheries as well as providing an international basis for the development of ecolabeling regimes.

With respect to ecolabelling there are a couple of articles that have provided specific guidance. For example, article 7 deals with fisheries management. It provides specific conformance criteria for states and ecolabelling regimes to follow to ensure responsible fisheries management. Sub-components of this article relate specifically to management objectives, management framework and procedures, data gathering and management advice, precautionary approach, management measures and implementation procedures (FAO, 1995). The most common modern day ecolabelling regimes use these same criteria as the foundations of their respective regimes.

Article 11 of the code deals specifically with the trade of fishery products and the importance of fisheries conservation and management in this process. Articles of specific relevance include:

> "11.1.11 - States should ensure that international and domestic trade in fish and fishery products accords with sound conservation and management practices through improving the identification of the origin of fish and fishery products traded"
>
> "11.2.2 - International trade in fish and fishery products should not compromise the sustainable development of fisheries and responsible utilization of living aquatic resources" (FAO, 1995).

These articles introduce the idea that through international trade the market could serve as a tool to improve the conservation and management of fish stocks through the harnessing of the purchasing power of consumers.

2.4 Defining an Ecolabel

An ecolabel is a market based system that encourages the purchase of products that can demonstrate that they have been produced in an ecologically sustainable manner. In most cases the product is affixed with a visible label that is used to harness the purchasing power of consumers to influence positive ethical and ecological decisions and influence harvesting practices. The simplicity of the program is the label which implies to the purchaser at the retail point of sale that the product has been produced sustainably as compared to another unlabeled product. Of course an ecolabel can only be applied to a product after it has been certified to be in compliance with the rigorous criteria of the specific ecolabelling program (Ward & Phillip's, 2008).

The International Organization for Standardization (ISO) have identified three main types of environmental labeling regimes (Ward & Phillips, 2008). They include:

- **First party labeling schemes:** These programs are generally established by individual companies based on their own product standards and criteria. The standards are based on criteria established by the companies generally in areas such as health, good quality or environmental issues. They are known as 'self declared' labels, and generally do not have third-party verification of the standard or practice. ISO defines this as a type II environmental labeling system.

- **Second party labeling schemes:** These programs are generally set up by industry associations for their members' products. As such the criteria are usually established by the association based upon pre-defined quality or certification criteria. Validation of compliance is normally determined through an internal certification procedure or through a contracted certification firm. ISO defines this as a Type I or Type III environmental labeling system.

- **Third party labeling schemes:** These programs are generally created by independent firms or organizations that are independent from the relevant industry sector involved, resulting in a perceived level of nonbias from the certification process by the industry sector. The labeling scheme in this case is generally owned by an independent firm that sets the criteria and will award a

label to a producer that has been independently (through third party) validated to meet the standard. This label would then be licensed to a producer and its logo could appear on a product or in some form of promotional material. ISO defines this as a Type I environmental labeling system and it is generally known as the most robust of the environmental labeling systems on the market today (Ward & Phillips, 2008).

These labeling regimes are somewhat generic in nature as they are applied to a number of sectors including seafood. In fact, the earliest and most successful adopters of ecolabelling came from outside of the seafood sector i.e. Blue Angel, Fairtrade, Forest Stewardship Council, etc. (Ward & Phillips, 2008). These programs would all fit within the definition of a third party labeling scheme and would be considered among the most robust, transparent and successful ecolabels globally.

Blue Angel is the oldest operating ecolabel which was adopted by the German government in 1977 and now operates throughout Europe. The program is a public private partnership that was created to promote environmentally sound products over others in the same category. Presently more than 1000 licensees carry the ecolabel on approximately 11,500 products in more than 80 product categories (http://www.blauer-engel.de/en/index.php).

The Fairtrade ecolabel was first adopted in 1988 by Max Havelaar in partnership with the Dutch development agency Solidaridad. This resulted in the first Fairtrade coffee from Mexico to be sold into Dutch supermarkets reaching a very large consumer segment. The program also provided a 'chain of custody' verifying that the program was benefiting the producers at the end of the supply chain. The Fairtrade program has expanded significantly over the past couple of decades and in 2007 it was recognized by the International Social and Environmental Accreditation and Labeling Alliance (ISEAL) as one of seven organizations that have reached the highest standards for ethical trade. The program currently has 827 certified producer organizations in 58 countries and representing more than 1.2 million farmers and workers (http://www.fairtrade.net/).

The Forest Stewardship Council (FSC) was established in 1993 primarily as a response to the rising concerns over global deforestation at the time. It was set-up as an independent non-governmental organization to promote the responsible management of the world's forests. As with the other labels the FSC certification provides a direct link between the responsible use and production of forest resources thereby allowing consumers to make purchasing choices that benefit people and the environment. The FSC is currently active in more than 50 countries and has certified

more than 150 million hectares of forests (http://www.fsc.org/). It is also important to note that the first third party seafood standard, the Marine Stewardship Council (MSC), was developed and adapted in part from the experiences of the FSC (Ward & Phillips, 2008).

This paper will focus on third party labeling regimes which dominate in the seafood sector. In addition to the independent assessment process these regimes would also entail a 'chain of custody' verification to ensure the products being represented as meeting the standard are indeed from the certified fishery. This must be demonstrated throughout the supply chain from harvesting through processing, shipment and into the marketplace.

Another key feature of third party labeling regimes is the accreditation process that they follow to validate the quality and overall 'systems management' of the certification process. With respect to ecolabels there are a number of institutions that contribute to the governance and overall accreditation process for the certification system. Key among these groups is the International Organization for Standardization (ISO), the International Social and Environmental Accreditation and Labeling Alliance (ISEAL) and the Global Ecolabelling Network (GEN). However, it is important to note that these organizations provide only limited guidance to ecolabelling regimes (Ward & Phillips, 2008).

Recognizing the overall lack of guidance for governments and organizations in this area the FAO developed and adopted guidelines for ecolabelling of wild capture fish. The guidelines were adopted in 2005 and revised in 2009 and their key principles include the following:

- Be consistent with the 1982 United Nations Convention on the Law of the Sea and the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, the FAO Code of Conduct for Responsible Fisheries and the World Trade Organization (WTO) rules and other relevant international instruments.

- Recognize the sovereign rights of States and comply with all relevant laws and regulations.

- Be of a voluntary nature and market-driven.

- Be transparent, including balanced and fair participation by all interested

parties.

- Be non-discriminatory, do not create unnecessary obstacles to trade and allow for fair trade and competition.
- Provide the opportunity to enter international markets.
- Establish clear accountability for the owners of schemes and the certification bodies in conformity with international standards.
- Incorporate reliable, independent auditing and verification procedures.
- Be considered equivalent if consistent with these guidelines.
- Be based on the best scientific evidence available, also taking into account traditional knowledge of the resources provided that its validity can be objectively verified.
- Be practical, viable and verifiable.
- Ensure that labels communicate truthful information.
- Provide for clarity.
- Be based, at a minimum, on the minimum substantive requirements, criteria and procedures outlined in these guidelines (FAO, 2009).

2.5 Introduction of Marine Stewardship Council

While a number of ecolabels began to emerge in the 1990's they were largely species specific and related to by-catch issues i.e. dolphin friendly tuna, etc. Other emerging regimes at that time included boycott campaigns organized by NGO's as well as consumer awareness guides on sustainable seafood. While these regimes had some success they fell short in terms of market penetration.

The introduction of the Marine Stewardship Council in 1997 was the first major step in advancing a sustainability certification regime globally. It did so by developing a model that targeted the beginning of the supply chain, focusing on fisheries and fisheries management. Simply put the process attempts to recognize and reward fisheries that are managed sustainably and encourages retailers to source MSC certified products and consumers to buy them. It rewards best practices in fisheries

management and harvesting technology and leaves it to the market forces to bring about conservation driven changes.

As noted earlier, efforts to establish the Marine Stewardship Council began in the mid 1990's and were driven by the WWF and Unilever. Unilever was one of the largest buyers of frozen seafood and it had just witnessed the historic collapse of the Grand Banks cod fishery and other stocks globally which resulted in a significant loss of raw material. Coinciding with this period were major concerns over the mismanagement of European fisheries and the general failure of European Union policies at the time. One could argue that this was the beginning of the 'enlightened self interest' movement by the retail sector as they realized the importance of sustainability to the bottom line of their business. For the WWF, interest in establishing the MSC was driven largely by the failure of traditional public policy and advocacy approaches to fisheries management (Ward & Phillips, 2008).

While their motivations were quite different the partnership between a major retailer and NGO provided to be a very formidable relationship in establishing a global market based third party sustainability certification regime. The overall MSC model and its global impact on seafood sustainability over the past 15 years will be investigated further in the next section of the document.

3.0 Overview of Existing Standards

This section focuses on the most significant ecolabeling and certification schemes that currently exist. While there are literally dozens of different standards in the marketplace very few have had the market penetration or credibility worthy of major consideration. For the purpose of this study the list of credible schemes has been narrowed to three based on several key criteria. They include:

- The degree of global market penetration;
- Science based program with independent peer review process;
- Non species specific program;
- Non governmental program;
- Non retailer program;
- Non industry specific program;

Based on these criteria three programs have been identified and are profiled below.

3.1 Marine Stewardship Council

As stated above the Marine Stewardship Council has been in existence for nearly 15 years now and is recognized in most circles as the industry standard. It is a voluntary and independent third party certification regime that assesses fisheries against a robust environmental standard for sustainable fishing. The MSC standard consists of three measurable principles:

- The condition of the fish stock;
- The impact of the fishery on the marine ecosystem; and
- Quality of the fishery management system(www.msc.org):

These principles were developed during an extensive global consultation process between 1997 and 1999 (Ward & Phillips, 2008). Fisheries are assessed against these principles by an independent third party certification body. If deemed successful, the seafood companies sourcing from the fishery are permitted to use the MSC's blue ecolabel along with the following statement:

> 'This product comes from a fishery which has been certified to the Marine Stewardship Council's environmental standard for a well managed and sustainable fishery (www.msc.org)'.

Figure 5: MSC Logo

Figure 6: MSC Logo on Retail Package

Source: www.msc.org

Source: www.birdseye.co.uk

Companies marketing MSC certified products are not required to use the MSC logo depending on their market access requirements. Companies choosing to use the logo for commercial purposes are charged a fee of 0.5% of MSC labeled fish as well as a fixed annual fee (Ward & Phillips, 2008).

Fisheries that meet the MSC standard are certified for a five year period and are subject to annual surveillance audits. Fisheries can lose their certification within the five year period if they are deemed to no longer meet the standard. Following the five year certification period fisheries are required to undergo a recertification process.

The MSC markets itself as being the only marine certification and labeling program that is fully compliant with the FAO Code of Conduct on Responsible Fishing and Voluntary Guidelines for Ecolabelling of Fish (FAO, 2005). They cite the following key compliance objectives in this respect:

- Third party fishery assessments utilizing scientific evidence;
- Transparent processes with built-in stakeholder consultation and objection procedures; and
- Standards based on the sustainability of target species, ecosystems and management practices (Ward & Phillips, 2008).

The proof of success of any certification regime is in its commercial uptake. It is fair to say that the MSC regime got off to a slow start with limited fisheries certified in the first few years of the regime. However, the past five years has witnessed a major increase in MSC certified products. The following are some key statistics released by the MSC in its 2010/2011 annual report:

- 250 fisheries in MSC program (34% annual increase);
- 105 fisheries certified globally (50% annual increase);

- 145 fisheries in full assessment (24% annual increase);
- 56 species certified (37% annual increase);
- Nearly 10,000 MSC labeled products globally;
- Over $2.5 billion US in global retail sales of MSC certified products;
- Over 50 seafood companies worldwide have made public commitments to source MSC certified seafood;
- Approximately 6% of all wild caught seafood certified to MSC standard (MSC Annual Report, 2010/2011).

Figure 7: MSC Fishery Participation Over Time

Source: MSC, 2011

Despite its commercial success the MSC process is not without its critics. Some of the criticisms and perceived shortcomings of the MSC will be discussed in chapter 7.

3.2 Friend of the Sea

Friend of the Sea (FOS) were established in 2006 by Dr. Paolo Brav who was the European Director of the Earth Island Institute's Dolphin Safe Project. It provides certification for both wild and farmed fish products. FOS certification criteria for fish products include:

- Target stock to be not overexploited;

- Fishery to generate maximum 8% discards;
- No bycatch of endangered species;
- No impact on the seabed;
- Compliance with regulations (TAC, IUU, FOC, minimum size, etc);
- Social accountability;
- Gradual reduction of carbon footprint (www.friendofthesea.org).

Figure 8: FOS Logo

Source: www.friendofthesea.org

Figures 9 & 10: FOS Logo on Retail Products

Source: www.friendofthesea.org

The FOS certification process is based on the sustainability of the fish stock as opposed to the management of the fishery. The certification process is undertaken by independent third party certifiers and the assessment is based on existing stock assessment data.

Key statistics on the FOS program include:

- Claims to cover 10% of global wild fisheries;
- 80% of FOS labeled wild products comes from the Peruvian anchovies fishery;
- 600 FOS products sold in 26 countries covering 70 farmed and wild species (FAO, 2011).

3.3 Global Trust FAO Model

The most recent significant player to emerge on the certification scene is Global Trust (GT). GT was founded in 1998 under the name IFQC and initially focused much of its attention on supply chain food safety certification as well as aquaculture standards development. In recent years GT has been accredited to the MSC certification requirement as a third party independent assessment agency. As such they can assess and certify fisheries against the MSC standard for sustainable fisheries.

Over the past couple of years Global Trust has gained a great deal of attention in its efforts to develop a new certification model based on FAO fisheries management standards. The program has been developed to allow fisheries to demonstrate responsible management consistent with the FAO Code of Conduct on Responsible Fisheries and their Guidelines for the Ecolabeling of Fish and Fishery Products from Marine Capture Fisheries. According to GT these documents have been translated into a more simplified assessment specification and incorporated into an ISO 65 based certification program which is administered by GT (www.gtcert.com).

Figure 11: Global Trust Certification Logo

Source: www.gtcert.com

The Global Trust program is based on a number of criteria including:

- Adoption and implementation of a structured fisheries management system. The objective is to limit the total annual catch (TAC) from the fish stocks so that catches confirm to levels permitted by the relevant authorities;
- Fish stock shall not be overfished and this shall be verified through scientific research and assessment by international experts;
- Implementation of an effective legal and administrative framework for the fishery, with compliance ensured through effective mechanisms for monitoring, surveillance, control and enforcement; and
- Effects of the fishery on the ecosystem are limited by the application of a specified approach (www.responsiblefisheries.is).

The achieved certification confirms responsible fisheries management and good treatment of marine resources. The specifications and methodology is accredited by an International Accreditation Forum (IAF) accreditation body to the international standard for certification. Based upon this process GT has recently received formal

notification of its full ISO 65 accreditation for the FAO based Certification of Responsible Fisheries Management Program (www.gtcert.com).

This new program was first adopted by the Icelandic fishing industry with support from the Icelandic government. The Icelandic cod fishery has been certified to this standard including chain of custody certification. In addition, the haddock, saithe and golden redfish fisheries are currently going through the assessment process (www.responsiblefisheries.is).

Figure 12: Iceland Responsible Fisheries Logo

Source: www.responsiblefisheries.is

This certification model appears to be growing in popularity with the Alaskan industry recently adopting a similar model. To date the Alaska Pollock, salmon, halibut and black cod/sablefish fisheries have been certified to this standard. In addition, the Alaska king crab and snow crab fisheries are currently going through the assessment process (www.sustainability.alaskaseafood.org). A similar initiative is currently being developed and piloted in Canada in partnership with industry and government agencies.

Figure 13: Alaska Responsible Fisheries Logo

Source: www.sustainability.alaskaseafood.org

This program can likely best be described as a public-private partnership between industry and government agencies. Certification is conducted by independent certifiers which makes it essentially a third party arrangement. A logo is often

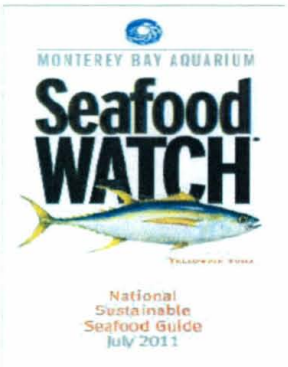
developed with this program, however its usage is not a requirement and there is no cost associated with its display on products.

3.4 Other Models

While there has been a significant proliferation of ecolabels in recent years only the above three would meet the criteria outlined at the beginning of the section. Species specific labels such as 'Dolphin Safe' tuna have had tremendous success over the years but it is a very narrowly defined program to deal specifically with the by-catch of dolphins in the tuna fishery. Similar topic specific schemes have been developed to certify good fishing practices, company specific labels and government labels. While these programs have had varying degrees of success they generally would not meet the requirement of being an internationally recognized third party certification regime.

Another model that has developed in recent years in the sustainable seafood movement is seafood consumer guides. Many of these programs have been advanced by prominent aquariums such as the Monterey Bay Aquarium, the New England Aquarium, Vancouver Aquarium, etc. The most prominent of these programs is the 'Seafood Watch' buying guide developed by the Monterey Bay Aquarium in 1999. The program is focused on buyers/consumers through the production of wallet-sized buying guides which critique fisheries and make purchasing recommendations based on the perceived sustainability of the fishery. While these guides have had some limited success in the food service sector they have had very little penetration at the retail level. In addition, at least some of these guides have been criticized as being based more on ideology than science i.e. anti-aquaculture, mobile gear fishing, etc. As such the scientific rigor of these programs is often very questionable.

Figure 14: Monterey Bay Aquarium Seafood Watch Guide



Source: www.montereybayaquarium.org

4.0 Evolution of Buyer Sourcing Policies

4.1 Retail Sector

It is important to understand that seafood sustainability standards have historically been driven by the environmental community, as noted in previous sections of this document. The early challenges faced by the NGO community on influencing sustainability stemmed from the fact that they had no direct means to engage and influence change. Efforts were largely targeted around consumer awareness and boycott campaigns with very limited success. This has changed significantly in recent years as many of the NGO's have made a strategic decision to focus their efforts on the marketplace primarily through seafood retailers. The impact of these market targeted efforts has been quite successful and retailers are now playing a much more active role in developing seafood sourcing policies around sustainability.

The early retail adopters of the sustainability movement stemmed from the creation of the MSC and the efforts of NGO's such as WWF, Conservation International and others. This became the first significant effort to develop a market driven program to influence sustainability. However, the success of this program was dependent on the uptake from the marketplace. This adoption began to occur in the mid 2000's when a number of significant European and American retailers developed policy statements around the sustainable procurement of seafood products.

The most aggressive sustainable seafood policies have emerged at the retail level in the UK. Key retail giants such as Sainsbury's, Marks & Spencer, Waitrose and Young's adopted sustainable sourcing policies in the mid 2000's that were considered quite advanced at the time. The policies committed the companies to sourcing seafood from MSC or other independently certified sources within a defined period of time (usually 5 years). Sainsbury's 2006 policy statement was quite interesting in that it identified a fast tracked process for fisheries that were MSC certified while other fisheries had a more extensive checklist to follow (Ward & Phillips, 2008).

The most significant advance in the North American market occurred in 2006 when US retail giant Wal-Mart announced that it would only source wild caught seafood from MSC certified fisheries within 5 years. As part of this process Wal-Mart partnered with WWF and Conservation International to help them prepare its supply fisheries for MSC assessment (Ward & Phillips, 2008). This had a major impact on raising the visibility of the MSC brand and created an immediate reaction from seafood suppliers given Wal-Mart's purchasing power. It also resulted in other American retailers scrambling to develop their own sustainable sourcing policies in response and often in partnership with NGO's.

In Canada retail leaders Loblaw's & Sobeys have also developed sustainable sourcing policies. In 2009 Loblaw's launched its new sustainable fisheries sourcing policy with a commitment to:

> 'sourcing all seafood including all canned, frozen, fresh, wild and aquaculture seafood from sustainable sources by the end of 2013. For us, sustainable seafood means that a species is fished using techniques that will ensure its health and availability for generations to come (www.loblaw.ca)'.

Loblaw's has established formal partnerships with NGO's such as WWF and SeaChoice to achieve this commitment.

In 2010 Sobeys launched its new sustainable sourcing policy. The policy was quite comprehensive but can be summed up with the following policy goal:

> 'By 2013, we will not sell any seafood species (in our seafood and grocery departments) that have major sustainability issues associated with them, where science-based consensus has defined the extent of the issues, unless the sources we procure from have science-based development plans and timetables for improvement. We will monitor development plans over time for demonstration of improvements, and will consider appropriate action if suitable progress is not made. As sustainability also includes social elements, we will consider in our decision-making the impact on the economy of Canadian-based local producer communities and their local retail markets we serve (www.sobeys.ca)'.

Sobeys policy goes on to outline its philosophy, principles, alignment with FAO Code of Conduct on Responsible Fisheries and engagement strategy. It has also enlisted the support of the Sustainable Fisheries Partnership (SFP) as its NGO partner to assist with the implementation of its sourcing policy. SFP works closely with various players in the seafood supply chain to advance sustainability through Fishery Improvement Projects (FIP's) in particular.

The difference in Sobeys and Loblaw's sourcing policies is a microcosm of an interesting dichotomy that has emerged globally in retail seafood sourcing policies. Loblaw's has developed a policy similar to that of many UK retailers with special emphasis on the MSC process and a consumer facing ecolabel. Sobeys on the other hand has developed an increasingly emerging policy approach that supports ecolabels such as the MSC but has placed special emphasis on developing improvement plans for fisheries that are in the greatest need for assistance. They imply that most of the MSC certified fisheries were well-managed prior to the MSC process and thus the impact on sustainability has been limited. As such they are focused on fisheries that are in the greatest need of assistance and developing improvement plans in concert with SFP focusing on affecting the greatest impact on seafood sustainability.

The most significant evolution of retail seafood sourcing policies occurred in 2011 when Wal-Mart announced its new approach. Its January 2011 policy update stated:

> 'We now require one of the following: MSC certification, BAP certification or equivalent standards. A significant proportion of the world's fisheries/facilities do not currently meet internationally accepted standards of sustainability. For those operations, rather than simply discontinue sourcing, we would rather use our buying power to provide both an incentive and a path to achieve sustainability (www.walmart.com).

This announcement marked a major shift over Wal-Mart's 2006 policy which committed solely to the MSC process. Its new approach still emphasizes the MSC process but shows more flexibility towards equivalent standards and overall endorses a 'carrot' approach over the 'stick' to influence global seafood sustainability. This has become a rapidly emerging trend where fewer retailers lock themselves into a single certification standard and instead provide more flexibility to influence sustainability.

It is highly unlikely that the retail sector will develop a common approach to sustainability certification any time in the near future. This is due largely to the highly competitive nature of this sector and the fact that they are very independent. However, a common feature of all retailers is that they are very price sensitive and have a significant desire to minimize costs associated with certification. As a result the certification standards that can be both scientifically robust and cost effective at the same time will likely have the best chance of success into the future.

4.2 Foodservice Sector

The foodservice sector has been slower in adopting sustainable certification regimes. This has been due to a number of key factors. First, the sustainability certification movement has been driven largely in Western Europe where supermarkets tend to dominate the fish and seafood products market. As well ecolabel's in particular tend to be more conducive to the supermarket sector over that of the foodservice sector given they are more likely to use packaged products (FAO, 2011). Overall, sustainability efforts in this sector have been driven more by awareness campaigns through seafood guides adopted by a number of aquarium's particularly in the US i.e. Monterey Bay Aquarium's Seafood Watch Program, etc. As a result of these factors the foodservice industry has been very slow to embrace the sustainability certification movement.

One of the most significant advancements in procurement policies in the foodservice sector occurred in 2003 when UK based Brakes and its seafood supplier M&J Seafood became the first foodservice supplier in the UK to introduce an MSC product. Brakes commitment in this area has continued to expand as they are also an active

participant in the MSC's 'Fish and Kids' program in an effort to put sustainable seafood on school menus (FAO, 2011).

In the United States the foodservice sector plays a major role in seafood procurement and consumption with two out of every three seafood meals eaten outside of the home (FAO, 2011). The most significant sustainable seafood sourcing policy in the US was adopted in 2006 when Compass Group North America announced it was shifting its procurement policy away from threatened species towards more sustainably sourced seafood (FAO, 2011). At the time of the announcement it was the largest contract foodservice company in the United States. Its NGO partner in this commitment is the Packard Foundation through the Monterey Bay Aquarium. While the program was a step in the right direction their policy lacked clarity on defining 'sustainably sourced seafood' and fell well short of the more science based programs adopted by the retail sector. For example they list Atlantic cod as an unsustainable seafood product yet global cod stocks have been rising significantly in recent years and are considered quite sustainable particularly in jurisdictions such as Norway and Iceland. Many farmed species are also listed as unsustainable largely due to philosophical issues the company and its NGO partners have with farmed seafood.

McDonald's has also been quite progressive on the sustainability front adopting its Sustainability Fisheries Guidelines in 2005. McDonald's fisheries guidelines were adopted in partnership with Conservation International and the Sustainable Fisheries Partnership. The ratings system adopted in its guidelines are intended to address three criteria:

- Fisheries management practices (i.e. compliance and monitoring);
- Fish stock status (i.e. biomass levels); and
- Marine Environment and biodiversity conservation (i.e. protecting vulnerable marine habitats, etc.)(FAO, 2011);

McDonald's currently sources more than 50,000 tonnes of fish annually and it claims to have shifted more than 18,000 tonnes of fish away from unsustainable sources over the past five years (FAO, 2011).

McDonald's argue that its program is consistent with the principles of the MSC and that the vast majority of its products are already sourced from MSC certified fisheries. While committed to the MSC process McDonald's policy is comparable to many other buyers today by emphasizing MSC or other credible third-party certification programs (FAO, 2011).

Overall there has been some growth in sustainability certification regimes in the foodservice sector particularly in the US. In fact some key restaurant chains such as Darden's, Legal Seafood's, etc. now list the MSC logo on their menu for products that meet the standard. However, this sector is not expected to be a major growth area comparable to the supermarket sector in particular. Unfortunately it is still largely dominated by the aquarium awareness programs that have questionable policies that

in most cases lack significant scientific rigor or credible third party assessment and validation procedures.

5.0 Market Penetration of Sustainability Certification Regimes

While there has been a significant advancement in sustainability certification regimes in recent years it is important to put the context of this expansion in perspective from a global standpoint. In a recent report produced by the FAO it outlined a number of key determinants of a market that is conducive to ecolabel regimes. They include:

- An environmentally aware population based on a strong civil society active in the environmental/sustainability area;
- Retail of fish and seafood products dominated by supermarkets (typically large retailers in highly competitive market) rather than fresh fish markets;
- Consumption patterns based on a traditionally limited range of fish and seafood species leading to lower substitutability of product;
- Strong tradition and presence of processed and/or packaged fish and seafood products that lend themselves to the attachment of a label (FAO, 2011).

Based on these criteria it is probably little wonder that the overall market penetration of certification regimes has been quite limited globally. The leading certification regimes MSC and FOS claim to have 7 and 10 percent of the global capture fisheries market respectively (FAO, 2011). Other certification regimes such as the Global Trust FAO model are in the early stages of commercial impact and thus have a small percentage of the market. Overall less than 20% of global wild seafood products are currently certified to an acceptable sustainability standard (FAO, 2011).

Another trend in the market penetration of certified fisheries is the significant concentration that has occurred in certain markets. For example a 2009 study of MSC certified products revealed that 67% of the products were contained in six countries (Germany, United States, Netherlands, Sweden, Switzerland and the United Kingdom) (FAO, 2011). This statistic confirms that MSC's market is primarily concentrated in Western Europe and North America. However, to be fair this market concentration is not as pronounced as it had been in previous years and there are some signs that an expanding market is occurring for MSC labeled products.

The market penetration for FOS labeled products reveals a similar trend to that of the MSC. A recent study concluded that the vast majority of FOS labeled products is found in Italy where the label is based (FAO, 2011). Other areas on concentration include Switzerland and Spain but beyond that there is very limited awareness and use of the FOS brand.

Ecolabeled species for both MSC and FOS products also show a similar trend in terms of concentration. For example 80% of FOS certified products are attributable to one species, namely Peruvian anchovies. Similarly Alaskan salmon and Pollock accounted for approximately 56% of all MSC certified products in 2009 (FAO, 2011).

Overall it is clear that the market for sustainably certified seafood products is concentrated primarily in Western Europe and North America and the products themselves are similarly concentrated over very few species. This commentary is not intended to take away from the success of regimes such as the MSC but rather is simply stating facts and identifying a current weakness in the certification system.

If the current sustainability certification movement wishes to truly have an impact on global seafood sustainability than it is imperative that they find traction in new and emerging markets in the developing world which currently represents approximately half of the worlds export of fish and fishery products (FAO, 2010). The movement's lack of traction in developing world fisheries will be studied in more detail in a subsequent section of this report.

6.0 Consumer Awareness of Sustainability Certification Regimes

A common fallacy of the sustainability certification movement has been the assertion by many NGO's that it has been driven by consumer awareness and interest in purchasing products that are sourced sustainably. In fact this movement was largely driven by the NGO community at the start and in recent years retailers have taken a more active leadership role in this respect. It could be argued that one of the biggest weaknesses of this campaign has been the lack of consumer engagement and awareness of the movement.

A number of surveys have been conducted in recent years to gauge consumer awareness of certified seafood products. In most cases consumers have been far more aware and concerned about factors such as price, quality and safety over that of sustainability. This trend has been even more pronounced since the economic downturn in 2008 which has trended consumers far more towards price sensitivity over any other factor. This was confirmed by a Neilson Global Online Survey in March of 2009 which surveyed 25,420 consumers in 50 countries (Banks, 2009).

This trend has also been confirmed through retailer surveys of its consumers. Birds Eye Iglo is the number one frozen food company in Europe and has long been committed to sustainable seafood sourcing policies being one of the original architects of the MSC. In a 2009 consumer insight survey, sustainability was listed as the 7th most important purchasing consideration behind price, best before date, freshness, physical appearance, food safety and climate change respectively (Hajipieris, 2009).

More recently Perishables Group based in Chicago released the results of a US survey of 1,000 survey respondents which listed food safety and price as top of mind issues when purchasing seafood. 40% of respondents stated they knew nothing or very little about seafood sustainability concepts and only 5% were familiar with the MSC. On a positive note the authors noted that seafood sustainability awareness is showing signs of growth over trends dating back to the 1990's and will likely continue to grow in the years to come (Seafoodnews.com, 2012).

There are other recent reports that also indicate some level of improvement in consumer awareness of ecolabeled products. A research survey carried out by AMR Marketing Research in Sweden and the Netherlands in 2011 showed a significant improvement in the awareness of MSC labeled products. The survey stated that when shown an unbranded product 34% and 28% of consumers in the Netherlands and Sweden respectively were aware of the MSC ecolabel. Further 45% and 34% of Swedish and Dutch shoppers respectively reported buying more ecolabeled products

over a year ago. (MSC, 2011). However, it is important to note that this survey was carried out in two countries considered very progressive with respect to awareness of seafood ecolabels.

Looking at consumer awareness from a geographic perspective also paints a very interesting picture of certified seafood products. A recent report from the FAO identified several factors that have a significant influence on markets for ecolabeled products. They include:

- A relatively affluent, eco-aware population;
- A strong civil society;
- An active NGO community; and
- An active media (FAO, 2011).

Based on these factors it is not surprising that consumer awareness of certified seafood products is greatest in Western Europe and North America. Conversely consumer uptake is very limited in the emerging markets of Asia, Africa and Latin America. One notable exception to this geographic trend is in Japan where some improvements in consumer awareness of sustainability certification regimes have been occurring. However, Japan would be considered unique in Asia in that it would meet most of the criteria identified above.

Ultimately the success of sustainability certification regimes will depend on an increasingly aware consumer base. This will include the need to expand awareness in current key markets such as Europe and North America but perhaps more importantly expanding consumer awareness into key markets such as Asia.

7.0 Challenges of Sustainability Certification Movement

7.1 Global Impact

One of the key limitations of the sustainability certification movement is the relative high level of concentration of the movement to Europe and North America. Currently the developing world is responsible for approximately 80% of global production and more than 50% of global value (FAO, 2010). These regions have some of the world's most pressing fisheries sustainability issues yet the level of penetration of sustainability certification regimes have been extremely limited. In fact, developing world jurisdictions have been some of the harshest critics of sustainability certification regimes because of their concerns that it may create a barrier to trade due to their inability to meet the rigorous criteria of existing standards.

A recent report by the FAO highlighted the lack of uptake of sustainability certification regimes in the developing world as attributable to three key factors:

- The lack of an economic imperative for certification. Developing countries have a limited presence in the markets, species, types of products, and supply chains where pressure to be certified is the greatest;
- Ecolabelling schemes do not translate well into the typical conditions of the fisheries environment in developing countries (insufficient fisheries management regimes, data deficiencies, small scale multispecies fisheries, etc.);
- The high cost of certification are often prohibitive for small-scale or resource poor operators (FAO, 2011).

These challenges are structural in nature and it is clear that a major uptake of sustainability certification regimes in developing world fisheries is not likely to occur over the short term. However, there are some success stories that are emerging that hold potential for the future. For example, several countries came together in recent years to initiate work on the ecolabelling of Nile perch in Lake Victoria. As an export oriented fishery with sustainability concerns this process was identified as essential to ensure the future of this industry. The group conducted an MSC pre-assessment on the fishery in 2008 which was used subsequently to develop the Lake Victoria Fishery Management Plan (2009-2014) (FAO, 2011).

In an effort to address some of the key structural challenges in developing world fisheries the MSC recently developed a new Risk Based Framework (RBF) for data

deficient and small scale fisheries. This framework has now been integrated into its fisheries assessment methodology and can be used in any fisheries assessment (FAO, 2011).

Overall the advancement of the sustainability of developing world fisheries will likely require a significant expansion in public private partnerships with significant financial investments to address current deficiencies. This should involve funding support from NGO's, retailers, aid agencies, sovereign governments, etc. on a partnership basis and building on successful case studies such as the Nile perch.

7.2 Impact on Sustainability

The whole basis for the establishment of the sustainability certification movement was to have a positive impact on global seafood sustainability. Based on this ultimate benchmark it is import to reflect on the impact the movement is having on advancing the sustainability of fish stocks. Given the overall movement has had a relatively short history it is somewhat premature and challenging to assess its overall success with such limited data. However it is possible to outline some of the significant patterns that have emerged in recent years to gauge current and future success.

First and foremost, it is important to recognize that sustainability certification regimes were never intended to be the panacea to solve all of the global challenges associated with marine living resources. Instead, they are one tool in the toolkit of fisheries management that if advanced effectively can have a positive impact on sustainable fisheries. As such they must be implemented in conjunction with government measures to achieve effective fisheries management (FAO, 2011).

It has been argued by some that seafood awareness campaigns and sustainability certification regimes have had virtually no positive impact on seafood sustainability and in some cases have actually resulted in negative impacts on sustainability. In a publication by Jacquet and Pauly in 2007 (Jacquet & Pauly, 2007) they contend that these market based campaigns actually undermine seafood sustainably as they result in an increased demand for seafood products leading to downward pressure on the resource. They contend that a more appropriate approach would be a campaign to move towards a 'slow fish' or 'no fish' movement to slow the rate of fishing and thus positively impact sustainability. However the authors make no effort to discuss the impact that a shift in food source would have global sustainability and biodiversity i.e. impact of shifting to poultry, agriculture, etc. Recent publications have identified that fishing activity compares very favorably against other food production methods in terms of overall biodiversity protection (Hilborn & Tellier, 2012).

In August of 2011 the MSC released a report entitled 'Researching the Environmental Impacts of the MSC Certification Program' which was conducted collaboratively by three independent firms (MRAG, 2011). As the title suggests the report was meant to examine the current evidence of environmental impacts related to the MSC program. The report concludes that some very significant 'on the water' improvements are occurring throughout the program. However, the most significant positive changes are occurring at both the pre-assessment level and through addressing the closure of conditions that are raised in the assessment process. The least impact would be occurring in fisheries that are already well managed and meet the MSC requirement with few conditions (MRAG, 2011).

The above conclusions make sense on a number of fronts. First, MSC pre-assessments have become a very useful 'self-assessment tool' for fisheries to identify key gaps in performance and can be used as a 'road-map' to improvement (FAO, 2011). In some cases these fisheries may move quickly into the certification process or more frequently will lead to the development of 'improvement plans' to prepare for certification at a future time. In these instances fishery management plans are often being developed or adjusted to address issues identified in the pre-assessment process. Similarly, addressing the conditions of certification outlined in the certification process can lead to marked improvements in elements of fisheries i.e. by-catch, habitat impact, etc. The report provided examples of by-catch impact in fisheries such as South African hake, Chinook salmon and the pacific Pollack fishery.

One of the more interesting findings of the report relates to the wider impacts the certification program has had on both certified and non-certified fisheries. Five key areas of change were identified. They include:

- **Research** - acceleration, focus or expansion of scope in certified and non-certified fisheries;
- **Fisheries Management** - changes in management of non-certified fisheries;
- **Attitudes, mindsets, awareness** - changes leading to higher management or voluntary standards in certified and non-certified fisheries;
- **Holistic approaches** - management becoming or staying focused on wider environmental concerns in certified and non-certified fisheries;
- **Stakeholder engagement** - improved working relationships leading to positive outcomes in non-certified fisheries (MRAG, 2011).

Overall it can be generally concluded that improvements in global fisheries sustainability related to certification regimes is an evolutionary process. Given the movement is still young major change cannot be expected at this early stage.

However, there are some significant signs of positive environmental change emerging which should only improve with time assuming the movement continues to expand, particularly in new jurisdictions in the developing world.

7.3 Cost to Industry

The sustainability certification movement has been driven largely by the NGO community and more recently by the seafood retail sector. The seafood industry itself has been the forgotten stakeholder in this movement and it has largely been relegated to the role of reluctant follower. The NGO community has done a masterful job of wedging themselves between the consumer and buyers thereby forcing industry compliance as a condition of access. Given this untenable situation industry groups are increasingly adopting certification regimes not necessarily through their overwhelming interest in improving sustainability but rather as an inevitable requirement to maintain market access or 'enlightened self interest'.

One of the most significant concerns raised by industry related to the sustainability certification movement is that of the costs associated with certification. After all, in the majority of circumstances it is the industry itself that has to foot the bill for certification associated costs. A recent study of the MSC program indicates that 62% of successful certifications were funded solely by industry, 38% were cost shared and 10% were paid solely through government grants (Roheim & Seara, 2009).

The costs associated with both the granting and maintenance of certification can be quite expensive. Again looking at the MSC as the industry standard it has been estimated that the cost of a full assessment can range from $10,000 - $250,000 US depending on the complexity of the fishery involved in the assessment. The pre-assessment cost can range from a few thousand dollars to tens of thousands of dollars (FAO, 2011). The MSC have argued that these costs should fall with time as efficiencies are found in the assessment process and smaller scale fisheries start to enter the program. To date many of the certified fisheries have been large scale industrial fisheries that can be complicated and thus costly to certify.

Some of the other certification regimes on the market such as the FOS and FAO model have argued that their programs are much more cost effective than the MSC. The FOS for example estimate their certification costs at approximately $2,000 US largely because their assessment methodology utilizes less independent data analysis and thus is far less time consuming (FAO, 2011). The new FAO based program developed by Global Trust also claims to be more cost effective than the MSC model.

Unfortunately the costs associated with certification do not stop with the assessment process. In the case of the MSC most fisheries have conditions of certification that need to be addressed and are assessed through annual surveillance audits of the fishery. Due to the complexity of these conditions industry is increasingly looking to private consultants and institutions to assist them in this process which again adds to industry's costs. It is also important to note that the MSC requires certified fisheries to undergo a complete recertification process following a five year period which also adds a significant cost to the process.

Both the MSC and FOS also charge a fee for any company wishing to use its logo on products from a certified fishery. This cost is often borne to the processor of the product. In the case of the MSC, groups selling up to $200,000 US would pay a $250 annual fee plus 0.5% of sales. Groups selling between $200,000 - $500,000 US of labeled product would pay an annual fee of $1,000 US and 0.5% of sales of consumer facing product. FOS on the other hand charges an annual fee of approximately $4,200 US for certified companies wishing to use the FOS logo on their product (FAO, 2011).

Of course there are other indirect costs to industry in the form of any changes in management practices that may result from the certification process. An example may include a quota reduction that could occur as a result of certification which would of course result in less short term revenue to the industry. However, the flip side of that argument is that adopting a more sustainable approach to fishing should lead to better long term returns to the industry.

A recent publication in Marine Policy (Rangeley & Davies, 2012) identifies the challenges association with these additional transitional costs of moving towards a sustainable fishery. They contend that the social and economic challenges associated with transitioning prove to be a very powerful disincentive for change. As a solution the authors propose the establishment of a 'financial institution for the recovery of marine ecosystems' (FIRME) which would provide financial security to the fishing industry during the recovery or transitional period of the fishery towards sustainability.

Overall there is little doubt that the direct and indirect costs associated with fisheries certification are significant and they often accrue directly to industry. This is quite interesting given the fact that it is government that has the responsibility for sustainable fisheries management. During a 2009 roundtable on eco-labeling and certification in the fisheries sector it was stated that industry and NGO's shared the view that government agencies should share significantly in the financial burden of certification when the costs relate to government policy failure (OECD, 2009).

The cost of certification is one of the key reasons why a significant portion of the seafood industry has yet to fully embrace the sustainability certification movement. The MSC has been a target of criticism in this respect given some of the cost factors identified above. This has also been cited as one of the key reasons for the emergence of the lower cost FAO model developed by Global Trust and currently being implemented in Iceland and Alaska. This development will be discussed in further detail in the concluding section of the document.

7.4 Price Premium

One of the key fallacies of the sustainability certification movement is that certification of fishery products will result in a price premium in the marketplace. In fact there is very little evidence to support this argument as most industry groups today are resigned to the fact that certification is more about maintaining 'market access' for products in key market segments than about any kind of price premiums (FAO, 2011).

In some cases where arguments have been made that fish products receive a price premium it is very difficult to determine the factors contributing to the premium. However, a number of producers have stated that having certification has resulted in far less volatility of their product in the market-place, which would create at a minimum some level of price stability. This was confirmed by participants at the 2009 Roundtable on Ecol-labeling and Certification. Participants also went on to state that buyers professed that consumers are not willing to pay extra for certified fish (OECD, 2009).

A 2011 study published in the Journal of Agricultural Economics by Dr. Roheim concluded that a price premium was occurring for MSC certified products at least at a regional level. The study investigated sales of 24 frozen pollock products over a 65 week period during 2007 and 2008 in a number of London supermarkets. The study noted a price premium of 14.2% of MSC labeled pollock over that of non-labeled pollock products. Sales of MSC labeled products were also noted to be higher over non-labeled products with period sales of 3.3 and 3.03 million units respectively (Roheim, 2009).

Dr. Roheim's study shows some signs of encouragement that price premiums are possible for certified products. However it is important to note that the study was carried out for one product in a market that would be considered the epicenter for the sustainability certification movement (London). Further and broader based studies are warranted to validate any trends in this regard. It would also be interesting to

determine if any of the value from the price premiums received actually accrued to producers.

Interestingly in 2003 Dr. Roheim predicted that as more fisheries become certified price premiums and volatility would likely decrease given the competition between certified suppliers (Rotheim, 2003). This argument makes a great deal of sense given competitive forces, however it will likely take a few years for this to materialize given the vast majority of the worlds fisheries remain uncertified to any acceptable standard.

7.5 Traceability

Most certified fisheries have a traceability or 'chain of custody' requirement to ensure the ability to trace products throughout the value chain and verify the overall integrity of the product. In the case of certified fisheries such as the MSC this also includes a requirement to guarantee that certified products are not mixed with non-certified products. While often underestimated, the traceability component of a certified fishery is often the most important as it verifies that a product actually comes from a certified fishery.

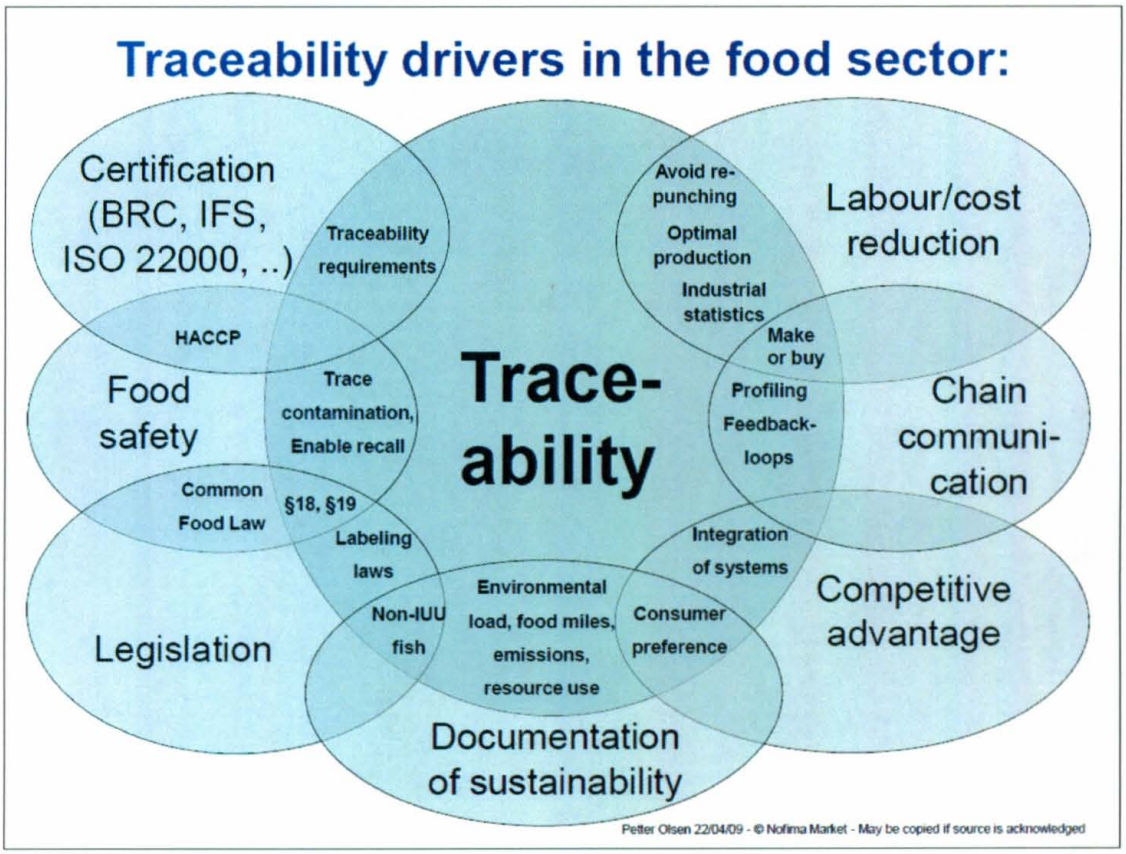
The FAO defines 'chain of custody' (COC) as *'the set of measures which is designed to guarantee that the eco-labelled product put on the market is really a product coming from the certified fishery concerned' (FAO, 2009).* The FAO Guidelines on Certification Schemes also stressed the importance of robust traceability systems promoting continuous improvement and clear accountability consistent with international requirements (FAO, 2009).

The importance of traceability is growing in significance in sustainability certification regimes as increasingly these schemes are moving from a business to consumer model (consumer facing logo on products) towards a business to business model where the certification process is more important than the label. In this emerging environment the traceability process is key as it guarantees the sustainability process to retailers and brand owners (OECD, 2009).

Currently the MSC process has been highlighted as having the most robust seafood sustainability traceability system. The MSC 'chain of custody' is the second step in the certification process and includes a comprehensive five step COC process that includes the adoption of a control management system, confirmation of inputs, separation of product, secured product label and a multi-year record keeping system (www.msc.org).

One of the challenges associated with traceability systems is that they are used very broadly in the fisheries sector which often creates a level of redundancy and confusion. In addition to seafood sustainability traceability systems there are also such systems for Illegal Unregulated and Uncontrolled (IUU) fishing, food safety, catch certification, country or origin, etc. Many producers unfortunately have to deal with a variety of these traceability procedures on an individual project which can be extremely time consuming and expensive (see figure 15).

Figure 15: Traceability Drivers in the Food Sector



Source: OECD, 2009

During the 2009 Roundtable on Eco-labelling and Certification in the fisheries sector it was hypothesized that perhaps an integrated traceability system could be developed that served multiple purposes based on the current requirements outlined above. This could significantly reduce the costs associated with multiple verification processes and create some significant efficiency in the industry. The roundtable highlighted this as a priority area for further inquiry and discussion (OECD, 2009)

7.6 Barrier to Trade

Some groups have argued that the advancement of the sustainability certification movement as a 'market access' tool is inconsistent with the World Trade Organization (WTO) rules and mechanisms. The FAO Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries stress that voluntary standards should not distort global markets and should not create any obstacles to international trade (FAO, 2009).

The WTO has in fact taken a policy decision on sustainability certification regimes and the use of eco-labels specifically. Its position is articulated on its web-site and states:

> "Labeling environmentally friendly products is an important environmental policy instrument. For the WTO, the key point is that labeling requirements and practices should not discriminate – either between trading partners (most favored nation treatment should apply), or between domestically – produced goods or services and imports (national treatment)"(www.wto.org).

While this issue has been subject to considerable discussion and debate over the years there is no overwhelming consensus that eco-labels constitute a barrier to trade. Overall the WTO has been very reluctant to make judgments related to eco-labels and other mechanisms that involve the protection of marine resources. This may change as environmental issues are beginning to gain more traction in the international community and will no doubt become an increasing issue in terms of market access.

Another significant issue related to any WTO challenge on eco-labels is that the challenges are normally government to government based. In the case of eco-labels the movement is largely being driven by NGO's which creates a level of complexity in terms of a WTO challenge. While there has been considerable debate on this issue no formal clarification has been provided by the WTO on the ability to challenge NGO's in this arena (FAO, 2011).

There is little doubt that sustainability certification regimes such as eco-labels are increasingly becoming a market access issue. While the regimes are considered 'voluntary' increasingly retailers are choosing not to purchase products that do not meet the companies sourcing polices based on issues of sustainability. As a result the ability of consumers to 'choose' a non-labeled product is decreasing and thus one could consider this a barrier to trade. In fact the 2009 OECD Roundtable on Eco-labeling and Certification in the fisheries sector agreed that this could in fact be considered a barrier to trade but stressed that this may be just a necessary

consequence given the overall benefits of fisheries sustainability to society (OECD, 2009).

7.7 Growth in Variety of Certification Schemes

There has been significant debate in recent years as to the perceived proliferation of seafood eco-labels and certification regimes. Depending on who the discussion is with this could be viewed as a positive or negative occurrence. Some groups have expressed concern the rapid growth in these regimes is leading to a reduction in the quality of programs with industry and other groups seeking cheaper options which may compromise quality and ultimately sustainability. Others have argued that too few regimes is leading to a monopoly in the certification movement creating concerns over cost creep as well as the potential 'ratcheting up' of the criteria required to meet the standard over time (FAO, 2011).

While there has been a significant advancement in the number of 'self-professed' certification schemes very few would meet the minimum criteria to operate in accordance with the FAO Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries. As outlined in earlier chapters of this document there are only a few regimes that would meet the FAO guidelines and be considered robust and transparent. The three key groups that have some level of claim to meet the FAO guidelines are the MSC, FOS and the Global Trust FAO model. The word 'claim' is used in this context as there is currently no benchmarking methodology against which to independently measure these schemes against the FAO guidelines.

The development of a benchmarking methodology to evaluate the quality of regimes would be a significant step forward in improving the credibility and transparency of this movement. A similar process was adopted in the food safety sector a few years ago with the adoption of the Global Food Safety Initiative (GSFI) to benchmark key international food safety certification schemes. There is no reason not to move in a similar direction in the sustainability certification movement and in fact all of the major schemes mentioned above have indicated a willingness to have their programs benchmarked against the FAO standard (OECD, 2009). Some progress is being made in this area as the FAO Sub-committee on Fish Trade has agreed on the development of an evaluation methodology and is currently under development (FAO, 2011).

Interestingly a new effort is being launched by the seafood industry to replicate for seafood ecolabels what GSFI has done to benchmark food safety regimes. The Global Sustainable Seafood Initiative (GSSI) is currently attempting to establish itself as an organization of major retailers and food service groups which would define the key

benchmark requirements for a credible certification and ecolabelling program based on the FAO Guidelines for Ecolabelling. Once established the GSSI would evaluate certification regimes against the requirements and those considered compliant would receive the endorsement of GSSI. The proposed initiative currently has strong industry support in Canada, the United States and parts of Europe and implementation efforts are ongoing (FCC, 2012).

8.0 Summary & Recommendations

As mentioned in the introduction, capture fisheries production is essential for global food security. Given the continued rapid growth in the human population, demand for seafood will no doubt continue to rise to meet consumption requirements. As a result it is imperative that significant 'on the water' improvements in global fisheries sustainability be made in the coming years. Such an approach would not only improve the sustainability of fish stocks but it would also lead to an overall improvement in the profitability of the global seafood industry as documented in the WB and FAO's 'Sunken Billions' report.

Ultimately the competitiveness of the global seafood industry and the health of our oceans are mutually dependent on 'creating shared value' from this renewable resource. While we have witnessed decades of failed fisheries management globally there is an inherent responsibility on the part of the current 'enlightened' generation to capitalize on this shared value and to reverse past trends. The market-based systems offered through sustainability certification regimes provide the potential mechanisms to achieve what sovereign governments and RFMO's could not do on their own. That is to harness the collective purchasing power of the marketplace to positively impact global seafood sustainability.

There is little doubt that the development of the seafood sustainability certification movement has evolved out of the failure of fisheries management regimes globally. The NGO community has been highly successful in wedging themselves between buyers and consumers using certification regimes as a market access based tool to influence seafood sustainability. While there has been much debate about the value of certification standards there should be no doubt that they are here to stay and their influence is growing rapidly. As a result it is time to shift the discussion away from debating the merits of such regimes and more towards improving their effectiveness in influencing improved fisheries sustainability and management in conjunction with improved efforts by government agencies.

This report concludes with a number of recommendations that could be used as a tool to improve the effectiveness of sustainability certification regimes leading to a more transparent, robust and effective system.

8.1 Development of Benchmarking Methodology for Certification Regimes

One of the biggest concerns that have been raised with respect to sustainability certification regimes is the lack of a transparent mechanism to benchmark the merit of the standard. Most schemes claim to be operating consistent with the FAO Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries. However, these claims are self professed and have not been independently assessed against an established methodology. This would be beneficial to the standard owner in validating their credibility but more importantly it would provide a level of comfort to all stakeholders considering an investment into the standard i.e. producers, retailers, etc. It is encouraging to note that the FAO Sub-committee on Fish Trade is currently assessing the development of a transparent and independent benchmarking methodology. In addition the current industry led efforts to establish the Global Sustainable Seafood Initiative is also an interesting development in this regard.

8.2 Incentive Based System for Transitional Fisheries

The ultimate measure of success in any sustainability certification regime is its actual impact on fisheries sustainability and management. As outlined in section 7.2 many of the fisheries currently certified to existing standards were well-managed fisheries before they entered the assessment process and thus the impact on sustainability has been limited. An independent assessment of the MSC program concluded that the greatest 'on the water' impact on sustainability is occurring in both the pre-assessment process as well as through addressing the conditions of certification outlined in certified fisheries.

In acknowledging the above, it is important to develop mechanisms to encourage fisheries that do not yet meet a certification standard such as the MSC to nevertheless address sustainability issues. An emerging trend in this area has been the use of Fishery Improvement Programs (FIP's) as a tool to engage fisheries that need improvements to meet established certification standards such as the MSC. These FIP's are currently being driven by two major groups namely the Sustainable Fisheries Partnership (SFP) and the World Wildlife Fund (WWF). They often involve commitments from the retail sector to continue to procure products from fisheries actively engaged in a FIP. Normally the FIP's would provide a finite period for a fishery to enter into the certification process, so it is very much incentive based. These are the types of incentive-based 'transitional' systems that need to be encouraged to improve overall fisheries management and sustainability.

This issue is particularly acute in developing world fisheries which currently constitute about 50% of the traded value of global fish and seafood. However, a very small percentage of these fisheries have achieved any level of certification standard for a variety of reasons outlined in this report. The overall global success of sustainability standards hinges on the ability to address this situation. Current certification regimes simply do not have the mechanisms in place to deal with the complexity of many developing world fisheries (i.e. data deficient, inadequate management tools, small scale fisheries, etc.). Further, given certification requirements are at present only a major issue in European and North American markets many developing countries are not feeling overwhelming pressure to be certified. Solutions to these problems are going to require that NGO's and certification regimes develop some innovative approaches to 'incentivize' developing world fisheries to engage in this process. Using tools such as fisheries pre-assessments and FIP's could form part of the solution if supported by NGO's and key retailers.

8.3 Future of Consumer Facing Logos

There appears to be a trend emerging towards a business to business model as opposed to a business to consumer model (consumer facing logo) in the sustainability certification movement. In this arrangement the certification process is more important than the label and the traceability of the product is what is vital to retailers as it guarantees sustainability and their brand. In fact, many retailers and producers would prefer not to use an eco-label on their product packaging as it often conflicts with their own branding. This has been a particularly contentious issue in Iceland and Alaska where significant investments have been made in product branding based not just on sustainability but also related to quality, food safety, etc.

The recent emergence of the FAO model by Global Trust in Iceland and Alaska is driven largely by a business to business model with very little focus on a consumer facing logo. In this case the Icelandic and Alaskan 'brand' stands on its own and they are simply looking for an organization like GT to independently validate that the fishery is indeed sustainable. Similarly certain companies that achieve MSC certification choose not to use the logo given the additional cost and limited value in some instances.

There is a sense that major retailers are slowly moving in this direction as well. Many have developed their brand image around sustainability and consumers appear comfortable that they are making 'ethical choices' by shopping at that retailer. Given the overall lack of consumer awareness of 'logos' this is not a stretch by any means. It can also result in some potential cost savings in the certification process which is

greatly needed. It is also important to note that the evolution of food safety standards have followed this business to business approach.

8.4 Cost of Certification

One of the biggest issues facing the sustainability certification movement has been the overall costs associated with the certification process itself. As has been outlined in earlier sections of this document the costs associated with certification can be quite significant depending on the fishery involved. Further, in the case of the MSC in particular the cost considerations do not stop with the certification process itself and continue into the conditions of certification, recertification in 5 years and the logo usage fee. It also does not take into account any changes in the management of the fishery that may be identified in the certification process that would need to be addressed at a cost to either industry or government.

Further compounding this problem is the fact the producers are responsible for the majority of the cost in the certification process while retailers see most of the benefit. Adding to the burden is the fact that there is very little evidence of producers getting a 'price premium' for certified product as it is being recognized more as a 'market access' issue.

It can be argued that governments should play a much more active role in addressing the cost considerations of certification given they are the 'custodians' of the resource. After all most producers that are engaged in this process are doing so due to the failed government management of fisheries resources. In this environment it is hardly fair to place the entire cost burden in the hands of industry. At the moment industry is assuming most of the risk in this process with very little reward other than maintaining a foothold in key existing markets.

On the issue of cost, ultimately there is work to be done by both certification regimes and government agencies. In the case of certification regimes more attention needs to be given to find some efficiency in the cost of certification. The regime that can develop both a robust and cost effective system will likely be most successful over the long term. In the case of governments some consideration has to be given to their 'public' role in this process as resource managers.

8.5 Need for Partnership

Sustainability certification cannot be viewed as the panacea to solve all of the problems related to the sustainability of global fisheries. It is rather just one tool in the tool kit of sustainable fisheries management options available to government and

industry. Thus, it is important that this 'market based' approach to sustainable fisheries be harnessed in conjunction with efforts by NGO's and government agencies to effect sustainable fisheries management.

As a cautionary note there is a concern that the competitive forces between NGO's, certification bodies and retailers to promote their certification schemes over that of others is actually undermining the intent of the movement. Some NGO's have increasingly come to see this process as a 'business' with an opportunity to generate some significant revenue for their organization. Again it leads to the appearance that everyone is making money on this movement with the exception of the fishing industry itself.

Overall there is a need for all stakeholders to park their agendas and harness their collective resources towards the ultimate mutual goal of sustainable fisheries management and the overall protection of our marine living resources.

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