STRATEGIC IMPROVEMENT OPTIONS IN FISHERY SUPPLY CHAINS

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ABSTRACT This article identifies strategic improvement options that aim to increase the sustainability of fishery supply chains. An option is deemed strategic if it takes into account the underlying patterns and change dynamics in fishery supply chains system. Using the quadrants and levels of Integral Theory and the double S-curve model from chaos and complexity theory, a methodology for an integral complex systems analysis was developed and applied. Based on this analysis, three translational interventions aligned to the current interests and worldviews of stakeholders and four transformational interventions were identified, providing a challenge to the current interest and worldviews to enable further development. The interventions identified are directed at retailers, restaurants, the financial sector, and small-scale fisheries. Effective collaboration between stakeholders was found to be one of the key success factors for all of the interventions identified.

KEY WORDS fisheries; supply chains; complex systems analysis; translation; transformation

Marine and freshwater ecosystems provide a plentitude of food. However, the increase in global demand for seafood has put great pressure on fish stocks, making overfishing one of the most important ecological issues of today. Many fish species are close to extinction. Also, current fishing methods have many negative effects on marine biodiversity, such as the destruction of sea-floor habitats and by-catch of other species such as dolphins and turtles. Aquaculture has negative side effects as well, including destruction of mangroves, water pollution in fish basins, and the need for wild-caught fish as a base for fishmeal.

Sustainable fisheries is an important political and societal theme in the Netherlands and worldwide. For example, it is one of the focus areas of the Dutch international biodiversity policy, and many nongovernmental organizations (NGOs) are active in protecting the oceans and stopping overfishing. Regulations to conserve marine biodiversity have limited effectiveness, as much of the fish are caught in international waters, and policies are not strict enough or are not being enforced effectively. Moreover, many retailers, traders, and fisheries do not see the urgency and lobby against implementing serious quotas or expanding existing marine reserves.

At the same time, leading retailers and traders are striving to become more sustainable. They are developing a different type of intervention aimed at creating a market for sustainable fish, by influencing consumer preferences. The Marine Stewardship Council (MSC) is the most well-known certifier of sustainable fishing practices, and their influence is growing in volume of fish certified.[1] MSC was founded in 1997 by the World Wildlife Fund and Unilever, with the aim to secure future supplies of sustainable fish. In 1999, MSC became an independent certification organization. MSC certification requires fisheries to meet three principles: sustainable fish stocks, minimal environmental impact, and effective management.

The fishery supply chain includes primary producers (fishermen), processors, traders (import and export), and retailers (supermarkets and fishmongers). Seafood production is complex, with many different

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players and sub-markets with big differences in size, level of organization, and willingness to become more sustainable. Within the sector awareness is rising that increasing the level of sustainability is possible and necessary. In the Netherlands, average revenues in the fisheries sector is around €3.6 billion and the sector employs about 14,000 people.

Despite previous and current initiatives in the Netherlands, the European Union, and other regions, marine biodiversity is in severe decline. More effort to enhance sustainability is needed. Besides starting new initiatives, much can be gained by increased alignment of current efforts and designing new projects to support and enhance existing dynamics. To achieve this, it is important to understand and take into account the underlying patterns and dynamics in the fishery system.

Purpose

The purpose of this article is to identify strategic improvement options in order to increase the sustainability of fishery supply chains. It focuses on change interventions that are directed at changing the behavior of actors in and around the supply chain. Our research did not focus on possible new government regulations.

There are many interventions possible, but the objective is to identify those interventions that are *strategic*. We identify an intervention as strategic if it takes into account the underlying patterns and change dynamics in fishery supply chains. In this article, the market for fisheries and their supply chains will be primarily assessed as a complex social system. Many change initiatives mainly focus on the external, objective characteristics of systems (e.g., behavior of consumers, market developments, fisheries stock information, and government regulations). Successful interventions, however, largely depend on people and the interaction between them. Within a complex social system different actors behave according to their interests and worldviews; they build relationships and collaborate with others. This article specifically addresses the *interior* aspects of the system and the interaction between people and structures to shed new light on change dynamics and possible tipping points. In the following section we will start with a discussion of the underlying conceptual framework, based on complexity and chaos theory, systems thinking, and Integral Theory. Based on the insights from this analysis, a set of intervention options will be described that are intended to incorporate and make use of the underlying dynamics of the system.

Conceptual Framework

Integral Theory will be used to describe and understand the fishery system. Integral Theory assumes that a complex social system should be looked at from different perspectives. Wilber (2001) distinguishes two different axes: *interior/exterior* and *individual/collective*. By combining these axes, four different perspectives can be distinguished (intentional, behavioral, cultural, and social): "I" (Upper-Left quadrant), "It" (Upper-Right quadrant), "We" (Lower-Left quadrant), and "Its" (Lower-Right quadrant) (Wilber 2001). According to Wilber, sustainable change in a system is only possible if changes occur in each of these quadrants. In many change initiatives the focus is on the exterior, while a large part of the key for success lies looking at both the interiors and the exteriors and the alignment between them.

Levels of Development

A second important aspect of complex social systems is developmental levels. Wilber (2001) argues that a more sophisticated understanding of developmental processes, particularly in the Left-Hand, interior quadrants, is important. He contends that the exterior quadrants develop toward greater complexity and the interior quadrants toward greater depth (of consciousness). Each successive level (or stage) of development not only surpasses (transcends) the previous stage, but includes all of the previous stages within its embrace. This pat-

tern of "transcend and include" is a fundamental feature of how people, cultures, and systems develop.

One useful developmental model is Spiral Dynamics (Beck & Cowan 2006). Spiral Dynamics describes levels of consciousness as adaptive intelligences that come up as a response to specific external circumstances or problems. Once these problems begin to be solved, energy frees up. New problems with a higher complexity often arise, spurring new adaptive intelligences. Marcel van Marrewijk and Marco Werre (2003) have translated the Spiral Dynamics model into four different orientations on sustainability:

1. *Compliance-driven:* sustainability at this level consists of providing welfare to society, within the limits of regulations from the rightful authorities. In addition, organizations might respond to charity and stewardship considerations. The motivation for sustainability is that it is perceived as a duty and obligation, or "the just way to act."
2. *Profit-driven*: sustainability at this level consists of the integration of social, ethical and ecological aspects into business operations and decision-making, provided it contributes to the financial bottom line. The motivation for sustainability is a business case: sustainability is promoted when it is profitable, for example because of an improved reputation in various markets (customers/employees/shareholders).
3. *Caring*: sustainability consists of balancing economic, social, and ecological concerns, which are important in and of themselves. Sustainability initiatives go beyond legal compliance and beyond profit considerations. The motivation for sustainability is that human potential, social responsibility, and care for the planet are important as such.
4. *Synergistic*: sustainability consists of a search for well-balanced, functional solutions creating value in the economic, social, and ecologic realms of corporate performance in a synergistic, win-together approach with all relevant stakeholders. The motivation for sustainability is that it is important in and of itself, especially because it is recognized as being the inevitable direction progress takes.

Translation and Transformation

Interventions have a larger potential for impact if they take into account the different orientations to sustainability. From a developmental view, two basic interventions are proposed: 1) *translation* and 2) *transformation*. Translation refers to ensuring that an intervention is aligned with the current needs, interests, and worldviews/drivers of the stakeholders involved. Transformation refers to those interventions that challenge the current way of thinking and enable new ways of thinking to emerge. If a certain orientation is expressed fully and addresses the problems it sees, that also leads to surplus energy for creating a new orientation. In this sense, translation makes transformation possible.

Double S-curve Model

Another important piece of the puzzle on development of systems concerns *change dynamics*. For this, we use the "double S-curve" model based on chaos and complexity theory (Eijnatten 2004; Peters, 2004).[2] The underlying principle of the S-curve model is the assumption that if a specific way of working is successful, it will grow. Contrary to some mechanistic models, however, at some point in time it will run into borders and growth will slow down and eventually stop. Some people will notice the flaws before others, and start to develop new ways of working and thinking. These new ways of thinking can be related to new levels of complexity of thinking and links to the levels described in the Spiral Dynamics model. By introducing fundamentally new ways of working, a new S-curve arises. The first phase of the new system is one of trial and

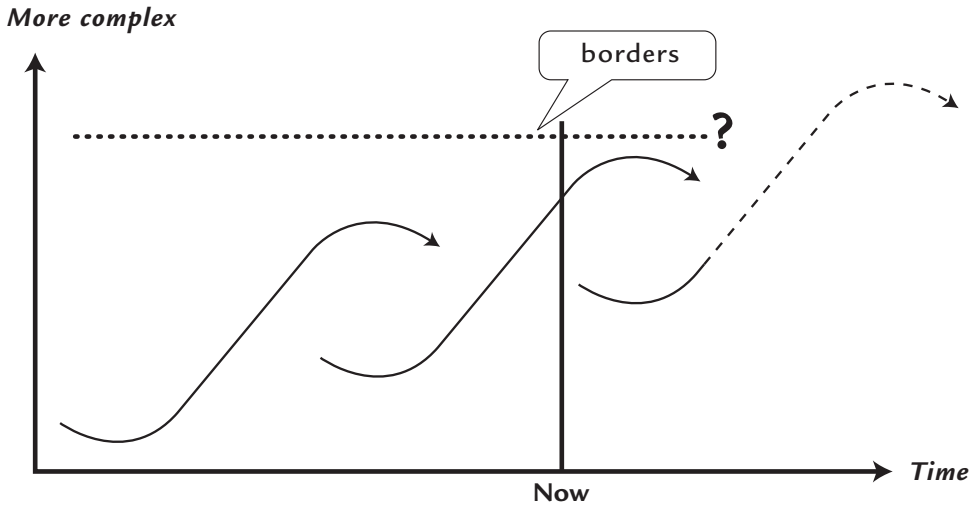

Figure 1. Illustration of the double S-curve model.

error. Many experiments will fail and turn out not to be durable. In some cases the new system dies a premature death. But in other cases, from these experiments robust new ways of working and thinking will emerge and lead to the growth of a new system that better fits the current circumstances. The dynamics of the double S-curve model are represented in Figure 1.

The double S-curve model makes differentiation between existing interventions possible. It allows the researcher to distinguish between an intervention that is aimed at prolonging an existing curve (by doing more of the same or by making small adjustments) and one that is aimed at developing a radical new way of thinking and doing. In a period of transition, the question is not just how to develop new ways of working, but also how to manage both the old curve and the new curve at the same time.

It should be noticed that different people will hold different views on whether or not borders are in sight and thus for the urgency to develop new ways of acting. Another addition is the concept of *stavolution*, which points to the notion that different issues and themes go through their own development. This notion will be made clear in the Results section when it is applied to sustainable fishery supply chains.

Methods

Within action research, actors in the field are actively involved in the research project and are addressed as "co-researchers" rather than "research subjects." Studies that use this method first of all seek to catalyze change in the system in which they operate on a daily basis. Secondarily, by actually stepping into the system, researchers gain an understanding of the change mechanisms of the system being evaluated. Building a relationship with "co-researchers," including iterative cycles of dialogue and shared meaning-making, allows researchers to influence the direction taken and are key to a successful action research project.

Our research started with explorative desk research to determine the scope (which was set to Dutch market parties) and to get a first feeling of current issues. Based on the desk research, a literature survey, and our network within the field, a selection of pro-active organizations and individuals in the non-profit and business community was made. In total, 26 people were interviewed (Table 1). For the interviews, a semi-structured approach as used in which underlying interests and values were specifically addressed. We also made use of the information from prior research into the Dutch flatfish fisheries (Hordijk, 2010). We analyzed the interviews and documents from a four-quadrant perspective:

Stakeholder Group	Number of Interviewees
Fishery companies	3
Certification organizations	2
Financial institutions	4
Environmental NGOs	6
Social NGOs	3
Retailers	2
Ministry of Development	2
Consultant	1
Restaurants	2

Table 1. List of interviewees in this study.

1. *Intention*: the interests and worldviews of the stakeholders, including the four orientations on sustainability (Upper-Left quadrant)
2. *Behavior*: the current actions and behavior of stakeholders (Upper-Right quadrant)
3. *Relationships*: the relationships between the different stakeholders, how they talk about each other, how they interact and the level of trust between them (Lower-Left quadrant)
4. *Systems*: the issues, trends, and systems from a socioeconomic, biological/ecosystem, and legal perspective (Lower-Right quadrant)

The analysis provided us with two important types of information: a general overview of the current state of the system and the change dynamics, and a gross list of issues and themes that seemed to be relevant for sustainable fishery supply chains (see Appendix A). On the basis of the gross list, we made a short list of the most relevant issues with a trusted group of interviewees.

Using the double S-curve model, for each of the most relevant issues we made an analysis of 1) how far they progressed in their own development; 2) how the different issues related to each other; and 3) how they related to the overall development of sustainable fishery supply chains. We discussed the selected issues including our analysis of their development with the co-researchers, which gave us further insight into the relevance of an issue for the stakeholders and provided further depth into those issues.

For each of the major issues *translation options*, in which the option fits the interiors (specifically the interests and worldviews) of the relevant stakeholders, and *transformation options*, in which the intervention provides a challenge, incentive for development of the interiors (specifically the interests and worldviews) of the relevant stakeholders.

Our analysis and strategic improvement options were further explored in a multi-stakeholder workshop. The aim was to provide more insight into the dynamics of the issues and further development of strategic improvement options. After that the workshop, some improvement options were discussed and further developed in direct meetings with two or three actors involved. In essence, we loosely followed a hermeneutical approach of shared meaning-making among the stakeholders in the system in different iterations and using different methods (i.e., semi-structured interviews, analysis, several interactive multi-stakeholder sessions).

Results

Four different types of results were identified:

1. Insight into interests and worldviews of main stakeholders
2. Insight into the main barriers and opportunities from an all-quadrant perspective
3. The change dynamics of the system in terms of the double S-curve models
4. Based on the results one to three, strategic improvement options

Stakeholder	Interests	Worldviews
Fishermen*	• Income • Continuity of company, minimizing costs • Personal/cultural: continuing family business; having freedom in fisheries activities • Good enabling conditions: workable government regulations; uniform control mechanisms; level playing field; protection from import non EU countries; limited responsibilities; high-quality personnel; stable government regulations; reputation of the sector	• Being a fisher is a strong part of identity • Compliance-driven: Only respect for those that are seen to be the rightful authorities (for religious fishermen God and sometimes government) • On board strong bonding between personnel • Nature is seen to be a mystery • Niche: some fishermen with caring sustainability orientation proactive in getting MSC certification
Government*	• Serving the interests of Dutch society • Limited costs of regulation, efficiency: clear rules; limited and efficient enforcement	• Compliance-driven: manage and comply with European rules • Care-driven in government employees: stimulate sustainable fisheries
Processor/ Wholesaler	• Selling more sustainable fish at a good price • Active NGOs • Aware consumers • Marketers of retail integrate sustainability into their marketing strategy • Competitors also become active while maintaining a competitive advantage • Access to fisheries resources	• Sense of pride in profession • Intrinsic belief in sustainability and building sustainable relationships that meet the needs of all stakeholders • Challenging the whole system • Conclusion: Caring and emerging systemic orientation, working in a profit-driven market environment
Environmental NGO	• Healthy ecosystems • Contribute to transformation of markets and supply chains • Access to funding from donors and governments	• Caring orientations with emerging synergistic perspective • Questions around choosing for sustainability only or supporting small steps toward more sustainable supply chains
Mainstream Proactive Retail	• Protecting brand and reputation • Preventing vulnerability to the actions of NGOs • Need for control over the supply chain • Need for flexibility to safeguard reputation enforcement	• Orientation is mainly profit-driven, avoiding reputation risks • Limited opportunities are being sought • Emerging examples of care-driven and synergistic orientation
Consumer*	• High-quality products; variation in assortment • Favorable price • Trustworthy information	• Different orientations (from compliance-driven to care-driven [cultural creatives]) • More care-driven consumers in Western European markets than in Southern European markets and less in Asian markets
Horeca	• Quality of fish • Long-term relationship with supplier	• Mainly profit-driven orientation • Some niche care-driven examples
Foodservice/Catering	• Reputation/access to clients	• Mainly profit-driven orientation
Financial Sector	• Good reputation	• Mainly profit-driven orientation: managing risks (mainly reputational and sometimes operational)

Table 2. Interests and worldviews of stakeholders. *Not interviewed in this study.

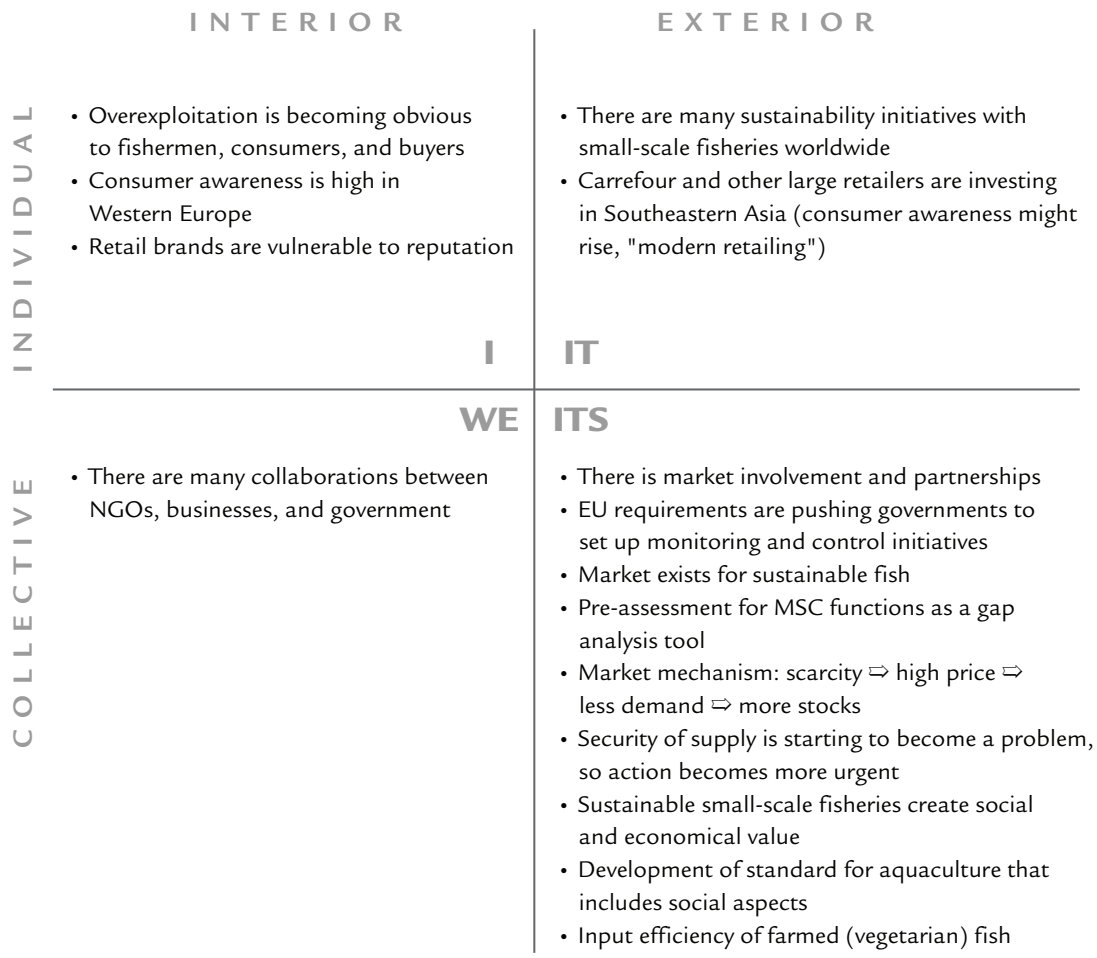

Figure 2. Opportunities for more sustainable fishery supply chains.

From the desk research and interactions with study participants we developed an understanding of the interests and orientations of the main stakeholders. These results are represented in Table 2. Secondly, we conducted an all-quadrant analysis of the key opportunities and barriers for more sustainable fishery supply chains, as seen by stakeholders. These analyses are represented in Figures 2 and 3. When stakeholders were asked what they saw as the key barrier to more sustainable supply chains, the response was mainly the relationships and collaboration (i.e., Lower-Left quadrant issues). The main issues were 1) a lack of action and a lot of talking in roundtable meetings; 2) a lack of coordinated involvement of all stakeholders; 3) a strong, singular focus on personal and organizational interests and no overarching collective goals; and 4) unclear roles and responsibilities.

Third, from the different interactions with stakeholders a shared understanding emerged of two important developments of the current system, which might seem contradictory but take place at the same time considering the double S-curve model. The first is the growth of the *Marine Stewardship Council (MSC)*, and the second is the appearance of *limits to growth of MSC*. This might require a new model that is either complementary to MSC, to allow for further growth of this model, or as the next stage in the achievement of a sustainable fishery. Only time will tell what this tension will evolve into and whether the released energy of the current MSC approach will result in the rise of a new, more complex system.

Figure 3. Barriers to more sustainable fishery supply chains.

MSC is Growing

Several of the issues observed throughout our research are related to the growth of the MSC label (Appendix A). MSC has proven its raison d'être and is widely accepted to be *the* standard concerning sustainable wild fish. It is the only certificate recognized by the Food and Agriculture Organization of the United Nations (FAO).[3] At the time of writing, about 7% of the fish caught worldwide is certified according to MSC standards.[4] Considering the fact that MSC considers its aims met only once all fish are being caught according to its standards, there is still a long way to go. However, fisheries are increasingly interested in entering into the certification process. This trend is strongly influenced by large retailers placing stricter requirements on the fisheries. To a lesser degree, the patterns described below for MSC also apply to other forms of eco-labeling such as "traffic light systems." These systems divide fish species in categories of "first choice," "second choice," and "avoid." An example of such a system is the Dutch VISWijzer.[5]

In addition to the growth of MSC, we also see that the MSC model and eco-labeling run into several limits that will need to be addressed in the future. Examples are the accessibility of the label to small-scale fisheries, the accumulation of toxins in fishmeat, and the bigger issue of the need for protein to feed the growing world population.

Based on the above evaluation, we developed strategic improvement options for a selected number of issues. First, we will describe the possibilities related to the growth of MSC with a focus on retail, restaurants, and the financial sector. Then, in the Limits to Growth section, we will address some of the limits it will run into, including the role of the small-scale fisheries, toxins, and need to feed the world. For a selected number of the issues we will provide a description and propose strategic improvement options that 1) fit the current interests and worldviews of stakeholders as described in Table 2 (translation), 2) provide a challenge to enable further development (transformation), and 3) suggest a natural next step for its development, using double S-curve logic (Fig. 4).

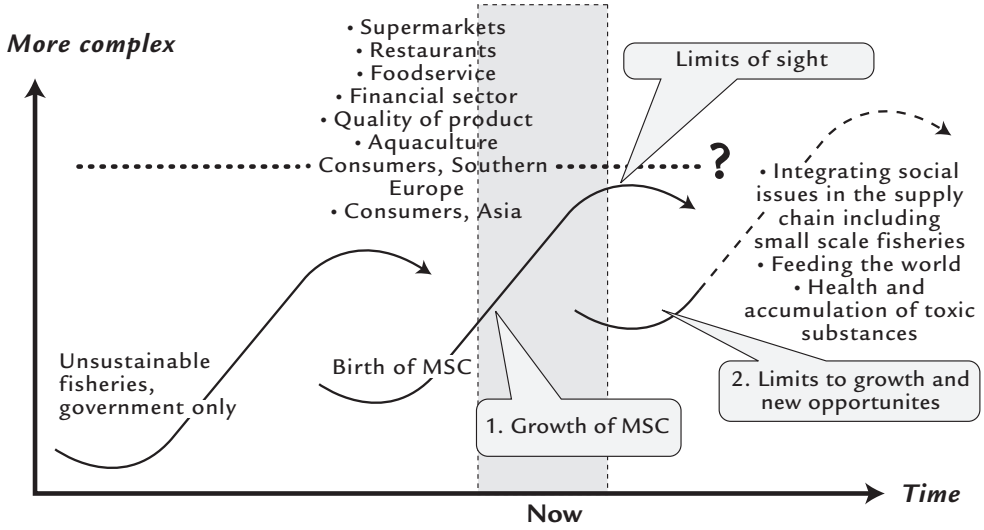

Figure 4. Relation between the growth of MSC and the need for a new model.

Intervention Options to Allow Growth of MSC

The analysis of some of the underlying MSC sectors and stakeholder groups go through their own development and influence each other. Figure 5 illustrates and gives an example of the notion of *stavolution*, indicating the mutual effects of developments on several sub-issues.

The biggest challenge for MSC now is to manage the growth of the label and to build on its successes. To achieve that, more interest in certification needs to be mobilized. Simultaneously, the integrity of the standard should be maintained, both for the certification of large-scale fisheries and the fisheries where major investments are needed in order to meet the standards. The fact that MSC is increasingly being critiqued by nature conservation NGOs and that scientists are being involved in the set-up of the MSC Council can also be considered to be a sign of maturation.[6]

The growth of the demand for MSC certification depends on developments in related issues such as the awareness among consumers in Western markets; the interest in Southern European markets and from there to Asian markets; developments in different sales points (foodservice industry, retail, restaurants, hotels, and among fishmongers); and last but not least the developments in the financial sector regarding integration of

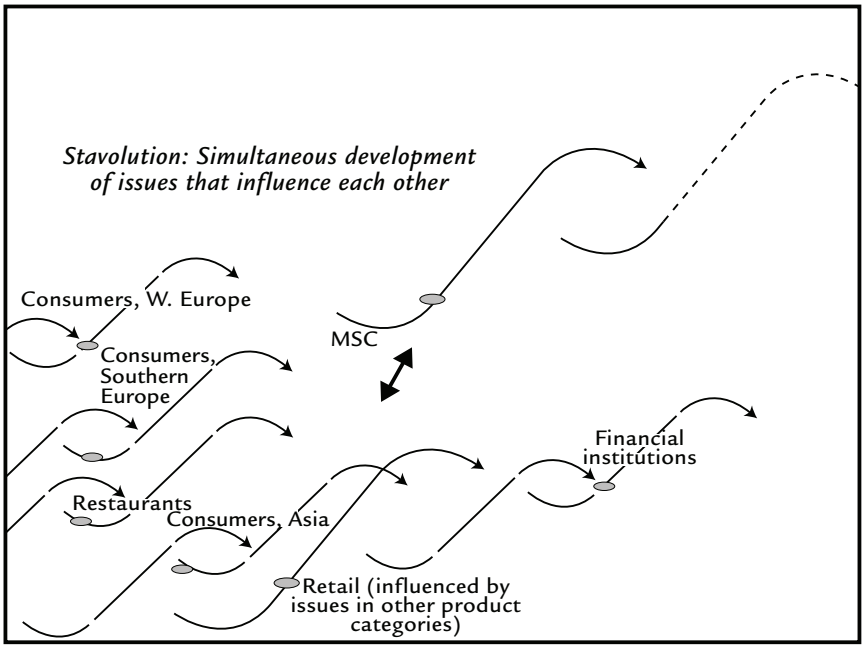

Figure 5. Underlying developments of MSC per sector/stakeholder.

environmental and social aspects into their decision-making processes. In all of these advances, the development of the interior quadrants, specifically the Upper-Left quadrant (sustainability orientation of consumers and the different business actors), is key.

We will further address the developments and strategic improvement options in retail, restaurants, and the financial sector. The issue of sustainable fish in the food-service industry and fishmongers were not researched in detail. The awareness among consumers in South Europe and Asian markets is a very relevant issue for further growth of the MSC and other eco-labels, but fell outside the scope of this research. We do, however, recommend further research into these markets.

Retail

If we look at the different points of sale, we can conclude that the largest amount of fish is being sold through supermarkets. Large retailers are seen as the most powerful link of the supply chain, as they are in direct contact with consumers and determine which fish species are being offered (so-called "choice editing"). This makes large retailers an interesting stakeholder group to accomplish further growth of MSC-certified and sustainable fish. If retail becomes more active and poses stricter sustainability demands, they will put pressure on their suppliers and further along in the supply chain on the fishermen to become more sustainable. Protecting their reputation and brand is an important driver for many retail companies to take activities with regard to sustainable fish. The revenue share of fish for retail is not large—only 1% to 2%. However, sustainability of fish stocks is relatively easy to communicate to consumers, which is one of the reasons why environmental advocacy organizations target retail companies.[7]

In order to protect their brand image, retailers need better insight into the different sustainability issues regarding fish and tools to control the supply chain. Good key performance indicators are needed to be able to answer critical questions from advocacy groups. As one of our interviewees explained: "Just large enough to protect the brand image, but not so large that change would require too much investments or risk-taking." From the above we conclude that the main sustainability orientation for Dutch retailers is a mix of compliance-driven and profit-driven orientation.

A strategic improvement option that has a *translation* focus (i.e., fits the profit- and compliance-driven orientation) would support supermarkets with tools that protect brand image and enable them to be as flexible as possible. A good example of this tack is the use of traffic light systems (Dutch supermarkets like Super de Boer, Jumbo, and Albert Heijn are using traffic light systems in addition to MSC).[8] Each market has some version of a policy that aims to increase their "green list" share and aims to stimulate fisheries to develop action plans to shift from red to orange, and from orange to green list species. Further use of and development of (also inclusion of new issues) these traffic light systems need to be supported.[9]

Dutch supermarkets are not sustainable frontrunners, internationally. Retail chains such as Coop, Carrefour, and Walmart show higher sustainability efforts and do not only place strict sustainability criteria on their suppliers (as Dutch supermarkets mainly do), but also support them in the transition process.[10] More and more pressure is being put on supermarkets to not only demand sustainable fish from suppliers and base decision-making on brand image protection, but to also play a more active role and accept sustainability as a central issue. In terms of a sustainability orientation, this means a shift from profit-driven toward a caring and synergistic orientation. This means, among other things, that retailers need to work with suppliers to improve the supply chain and consider how to use their marketing strength to stimulate a more sustainable seafood sector (e.g., by telling a positive story about sustainable fish instead of managing their reputation).

This is part of a broader movement within corporate sustainability across all sectors, in which companies take societal sustainability issues as a starting point and from there develop business models and activities that create value for society *and* for the companies. In a recent article, Michael Porter and Mark Kramer (2011) call this "shared value creation" and Wayne Visser (2011) calls it "Corporate Social Responsibility 2.0." In terms of the double S-curve model, supermarkets are at the end of the profit-driven brand image curve, and a new S-curve of "shared value creation" is emerging. This new orientation is not embraced by all actors in the system, but frontrunners are experiencing a need to develop new ways of thinking and doing. A great deal of experimentation and learning is still needed before this way of working can become mainstream for the retail sector.

A strategic improvement option for Dutch supermarkets with *transformational* aims (i.e., making the shift toward a caring and synergistic sustainability orientation) would look at fish, a product with a rather developed sustainability policy, as an opportunity for experiments for retail in this new curve, which could serve as an example. Lessons learnt could then be used to take steps in other products of the product portfolio. Some Dutch supermarkets have already started with small steps in which they take the example of international supermarkets Coop, Carrefour, and Walmart to cooperate more with their suppliers (e.g., Albert Heijn with their "*Vis van dichtbij*" [fish from close-by] initiative)[11] and niche-players such as Marqt and Landmarkt. More experimentation is needed, and it should be ensured that lessons learned are made visible and available to other stakeholders in the field.

Restaurants

Foodservice is another interesting point of sale. It is estimated that 33% of total fish consumption in the Netherlands takes place outside of the home.[12] Furthermore, restaurants can have an educational and awareness-raising function. Although we found no research to back this assumption, many interviewees mention that what consumers eat in restaurants influences their buying behavior in supermarkets. Maybe even more importantly, chefs have a great focus on and knowledge of the quality of fish. Their need for high-quality fish could serve as a challenge for those organizations that promote sustainable seafood. If the notion of quality can also be connected to responsible fishing, the proposition of sustainable fish will become richer and broader, which in turn will facilitate sustainable fish into becoming a more mainstream idea.

In the Netherlands there have been several roundtable meetings and campaigns to stimulate restaurants to put more sustainable seafood on their menus (e.g., meetings organized by Koninklijke Horeca Nederland,

World Wildlife Fund, and frontrunners such as Restaurant Fifteen and Figi). MSC has developed a new online methodology that makes the process of certification easier and cheaper for restaurants. Supplier Jan van As developed a concept in which the use of fish in their spawning periods are being excluded—"*Vis en seizoen*" (fish and the season).[13] A World Wildlife Fund campaign called *Duurzame vis op de kaart* (sustainable fish on the menu) aimed to motivate consumers to ask for sustainable fish.[14]

In spite of these activities, the development of sustainable seafood in restaurants is still at a very early stage in the new S-curve. It is not known how many restaurants offer sustainable fish on their menu, either using the *VISwijzer* or *Vis & Seizoen* notions. Also, only nine restaurants hold an MSC-certificate. These restaurants probably already have an intrinsic care for the environment (i.e., a "caring orientation" to sustainability), and want to show that there are alternatives even though it does not pay back in commercial terms. Other restaurants that favor a compliance orientation have not been willing or able to experiment with more expensive sustainable seafood in our current economically challenging times. The profit-driven orientation does not receive much challenge, as restaurants have not been not confronted with reputation risks and usually have limited market opportunities (i.e., "consumers do not ask for sustainable fish").

One of the possible intervention strategies would be to better understand the interests, values, and considerations of chefs to include or exclude sustainable fish in their menus and align strategic improvement options with those (*translation strategy*). From this assumption, two possibilities came up: 1) improve the quality perception, and 2) enable chefs to maintain their current relationship with their suppliers. During our research many people expressed the view that the main interest of the chef is the quality and price of the fish. Although open to dispute, most chefs assume that day-fresh fish is of better quality. The first MSC-certified products that were brought on the market in the Netherlands were not day-fresh and sometimes of limited quality. Since then things have improved and day-fresh products will soon be available. However, MSC-certified products still have a negative quality image. Secondly, chefs value their long-term relationship with suppliers, so if their current supplier does not supply MSC-certified fish, they will be hesitant to switch to another supplier.

Seaweb, a British NGO, seems to have followed a strategy of aligning with a profit-driven orientation. Based on insight into the concerns and interests and values of chefs, Seaweb has developed the successful "Good Catch Programme."[15] This program includes workshops and field visits organized for and by chefs; practical information to make it easier to serve sustainable seafood; promotion of best practices through the sponsorship of the Good Catch Award at the National Fish and Chip Awards; and supporting young chefs and catering colleges through the UK Young Seafood Chef of the Year Competition. It now has a network of more than 2,000 chefs. The workshops particularly seem to have connected individual chefs that have an interest in sustainable seafood into a community.[16] This has enabled the chefs to learn from each other and to take more action, which increases the visibility of the new curve for the chefs themselves and to the outside world.

The recently launched Jan van As–led initiative *Vis & Seizoen* includes the Dutch traffic light system for consumers (VISwijzer) and MSC. The main barrier for this initiative is that it is only accessible for clients of Jan van As, but the initiative is exploring the potential for working with other suppliers. A more *transformational approach* toward a caring sustainability orientation would be to confront chefs with the current situation of fisheries and ask them about the choices they make and values they hold in their private lives regarding sustainability, and stimulate and inspire them to apply those to their daily work. This intervention has not been put into practice and is based on the assumption that chefs in the context of their personal lives have started to develop a caring sustainability orientation.

Food Service Industry

For organizations in the Dutch foodservice industry there is a growing market demand for sustainable food products and with that for sustainable seafood. For example, the Dutch government has set strict sustainabil-

ity criteria in their purchasing policies.[17] Also, an increasing number of multinational businesses and larger companies mention requirements in their CSR policies regarding catering and food served in their cafeterias. The larger foodservice companies in the Netherlands, like Albron and Sodexco, are working toward sustainable food concepts.[18] Although not researched in depth, the main driver seems to be a profit-driven sustainability orientation.

Financial Sector

Many mainstream banks and investors are in the course of developing social responsible investments policies and looking at ways to integrate "environmental, social and governance" criteria into their decision-making processes. This is mainly driven by reputation considerations, pressure from civil society and some commercial opportunities. The most well-known initiative is the United Nations Principles for Responsible Investment, which has over 850 signatories with approximately $25 trillion (U.S.) worth of assets under management.[19]

Generally, it can be stated that most seafood companies are privately owned. Only a few of them are listed on a stock exchange. Provision of balance sheet credit and credit for specific investments are the most used services that banks provide to these companies. The seafood sector is considered by the financial sector as a niche market and very few multinational banks have developed specific expertise or departments in this area. Usually, fish companies deal with regional or local offices of these banks or with smaller banks. Banks that have built up a larger expertise and market share in this area are for example the Dutch Rabobank, DNb Nor, former Iceland banks such as Glitnir, and other Scandinavian banks.

The financial sector could put pressure on fisheries (upstream), fish-processing companies, trading companies, wholesalers, and retail (downstream) to become more sustainable (e.g., by formulating stricter sustainability criteria for their credits and investments or by addressing sustainability in their engagement practices). From a financial perspective, there seems to be a clear case for investors as to why fisheries that operate in an overfishing situation make for less interesting investment opportunities. Those fisheries have to put more effort (more costs) into catching less fish (less revenues). On the other hand, in practice there are many reasons why overfishing does not motivate investors to make different choices (e.g., the short-term perspective of investors and asset owners and a lack of knowledge and information). This is even more true for banks that provide credit, whose main interest is to ensure that the company is able to pay back the interest and loan. So overfishing only becomes a risk if the company is close to collapse or bankruptcy. If a company can avoid risks from overfishing, for example by moving to other areas, this usually is considered a sufficient financial guarantee for an investor.

From a corporate social responsibility perspective, more and more financial institutions are formulating sustainability guidelines regarding credit provision to fisheries. In some cases, concrete sustainability criteria have been formulated. Currently, for those banks it is difficult to assess companies against those criteria, mainly due to a lack of information and capacity. Most information available is limited to fish species and the regions in which they are caught, and not to the companies themselves. Some fisheries and certainly most fish-processing companies, trading companies, and wholesalers have many different species in their assortment with diverse sustainability performances. In addition, within financial institutions there is limited time and capacity available for in-depth assessment. Moreover, sustainability is only part of the whole credit-provision process.

A *translation* option (i.e., aligned with the profit-driven sustainability orientation of mainstream financial institutions) would be to overcome these barriers and make it easier for banks to assess their seafood industry clients. In practical terms, use could be made of the data gathered in the different traffic light systems. These systems have been introduced in different countries to inform consumers of the sustainability of fish species. For more professional buyers of fish (e.g., those working in restaurants or other foodservice busi-

nesses), more complete and elaborate manuals or guidelines have been developed. The traffic light system is based on detailed information about the current situation of many fisheries around the world. This could be very useful information for the financial sector, but it lacks specificity, does not rate companies, and only refers to the current situation and not to future developments.

In the current financial crisis, many people and organizations such as the international Occupy movement and the Dutch Sustainable Finance Lab feel that the current financial system is not working properly and that the financial sector in the future should play a more serving role, and should be proactive regarding the development of a more sustainable world.[20] It would be interesting to explore with all relevant stakeholders what that would mean for the role of the financial sector in sustainable fisheries supply chains (*transformation* option).

Limits to Growth of MSC

During our research process, issues like integrating social issues in the supply chain, population growth, and public health (i.e., accumulation of toxic substances in fish) arose. We have the feeling that MSC is currently not sufficiently addressing these issues and new ways of thinking and doing may be needed (a new S-curve).

The issue of feeding the world was not researched in detail, but concerns the question of what type of food "the world" should focus on in order to feed the growing population with the least negative environmental and social impact. One of the solutions would be to produce animal protein as efficiently as possible. In Lester Brown's *Plan B* (2003), it is concluded that fish catch has leveled off as a good source of protein and that herbivorous farmed fish species could play an important role in feeding the world efficiently.[21]

Another issue is that of accumulation of toxic substances in fish, which undermines the claim that fish consumption is healthy. According to several research studies, fish can contain high levels of mercury, lead, and industrial pollutants like PCB, DDT, and dioxins.[22] High levels of these substances in the human body can cause several diseases. This issue has received limited attention in the debate on sustainable fisheries and eco-labels so far. In the future, organizations active in sustainable fisheries will need to further investigate this issue.

Small-scale Fisheries

The founders of MSC were primarily focused on large-scale fisheries in Western countries. The logic behind this focus seems clear: Western parties have a big share in overfishing, can be relatively easily addressed, and have the capacity to make improvements on sustainability. However, the combined impact of the many small-scale fisheries scattered around the world is substantial, with their estimated share of worldwide catch at 45% (Kelleher, 2010). To achieve MSC ambitions, all fisheries are expected to adhere to its standards, and small fisheries that export to Western markets are confronted with strict requirements posed by buyers. For many small fisheries, the regulations are complex and costs make certification unattainable. Many of these small fisheries are involved in multispecies fishing, for which the MSC-procedure may be less suitable. Another barrier seems to be the lack of active government involvement. In many countries, formal management plans are lacking, as are reliable data archives, monitoring systems, and protocols.

To address the barrier of sufficient quantitative data, MSC has developed the "risk-based framework." This framework in principle can be used in all situations where scientific quantitative data are lacking, but was specifically designed for small fisheries in developing countries. The design is based on the results of seven pilot tests and, typical for the MSC approach, includes the involvement of several stakeholders. At the time of writing, according to MSC two small-scale fisheries have been certified using this framework and several fisheries are participating in pre-assessments and full-assessments against MSC standards. Some interviewees judge that the pilot organizations have not been successful at all.

Social Aspects of Small-scale Fisheries

NGOs with a focus on nature conservation are recognizing the importance of addressing social aspects within their activities, partly as a means to reach their ecological goals. The degree to which nature can be protected is to a large extent dependent on human behavior. People will only protect nature if they are able to satisfy their needs and meet their interests while doing so. Organizations like the World Wildlife Fund and the International Union for the Conservation of Nature take an approach based on the concept of "livelihoods." These organizations stress the fact that healthy levels of biodiversity and properly functioning ecosystems provide our societies and communities with water, food, medicine, and energy and are therefore essential for their livelihoods.

The activity of small-scale fisheries forms a substantial component of many local economies. In addition, they provide local communities with essential nutrition. Because of the importance of the fisheries sector, several initiatives and programs have been initiated within the international development aid sector to support local fishermen and raise the living standards in their communities. This is sometimes referred to as the "slow lane" in comparison to the "fast lane" of large-scale fisheries pursuing ecological labels.

Some of the NGOs involved in this line of activity are critical of labels for sustainable fisheries, which have a singular focus on ecological aspects. In 2008, the UN Food and Agriculture Organization organized an international conference in Bangkok on the theme of small-scale fisheries.[23] During this conference the call was made upon the Food and Agriculture Organization to reject labels for sustainable fish that disregard social aspects. MSC has been criticized for installing a barrier for international trade because its standards are less suitable to and accessible for small-scale fisheries. During the same conference a call was made to develop more regionally based certificates, which incorporate both social and ecological criteria. It is questionable, however, whether a diversification of labels would still be comprehensible to the consumers at the end of the value chain.

Local markets are also an important selling point for small-scale fisheries. Especially in countries with an upcoming middle class, the demand for fish is increasing. Local markets are usually less stringent on sustainability criteria and the added value of the MSC certificate is limited.

It is also interesting to note that social aspects had a prominent role in the development of the Aquaculture Stewardship Council (ASC), which was founded in 2009.[24] The ASC intends to become the standard for sustainable fish farms. Although there are big differences between wild and farmed fish (e.g., aquaculture is much more comparable to other farming practices so raising the sustainability standards requires major investments), the way in which ASC integrates social aspects could be valuable for MSC and other standards for sustainable wild-catch fisheries.

Interconnectedness of Large-scale Fisheries and Small-scale Fisheries

As mentioned above, many small-scale fisheries consider the MSC certificate to be a trade barrier. They feel especially marginalized because most certificates are being granted to larger, more industrially organized fisheries. However, for large Western fisheries and traders with serious ambitions regarding the sustainability of their activities, the interconnectedness between their work and small-scale fisheries becomes apparent. This is made very clear by fishing activities in Lake Victoria. Several of the larger, internationally operating companies active in this lake are granted a certificate (in this case Naturland). At the same time, small-scale fisheries operate in the same area, catching undersized fish to be sold on local markets or used as a base for fishmeal in fish farming activities. The risk of overfishing the natural resources of Lake Victoria as a whole is continued, which also endangers the reputation of Western fishing companies and even puts them at risk of losing their certificates.

The interconnectedness between ecological and social aspects of a sustainable value chain of fisheries

is apparent when placed in the context of international development. We also observe interdependence between industrial large-scale fisheries improving the sustainability of their operations and small-scale fisheries being supported from a socioeconomic perspective. This means that the successes of organizations focusing on ecological aspects and the ones focusing on social aspects are mutually dependent.

Many parties consider this issue to be very relevant. Multiple initiatives are being developed and there are still many "unknowns" regarding the exact nature of the interconnectedness and the way to approach them. We have noticed an openness toward a common search for better answers. However, there still seems to be a tendency to approach the issue from a single, dominant perspective (either ecological or social) or to consider the other perspective as a nuisance. New ways of thinking and doing are needed that integrate both social and ecological aspects, and the needs of both the industrial and the small-scale fisheries. To achieve this, a great deal of experimentation will be needed.

Discussion

With our action research–based method, we saw ourselves not as objective external researchers, but as part of the system we were trying to influence. For that, we identified the strategic improvement options using both an integral systems analysis and dialogue in different iterations with stakeholders in the system. The way we influenced the system turned out to be different than we expected beforehand. The overall and complete analysis of interventions options was of limited interest to stakeholders and seen to be largely our own perspective and rather conceptual. Also, the extent to which the new intervention options were identified and adopted has been limited.[25] Our influence was much more that stakeholders, through our interaction with them, developed a better understanding of what they were doing themselves by giving insight into the underlying patterns of the broader system and the relationship of their interventions to other interventions.

The quadrants and levels of the AQAL model and the double S-curve-model provided us a way to go beyond a simple list of different possible improvement options, and understand and communicate how the options relate to developments in the whole system and to each other. The double S-curve model gave us the opportunity to *simultaneously* see the value of interventions aiming at the growth of a certain system (in this case MSC) and of interventions aiming to go beyond that system.

Integral Theory provides sustainability researchers a means to understand the complexity and depth of issues in each quadrant (Tissot, 2005). The interior aspects of complex social systems are often neglected in a systems analysis, but Integral Theory assumes that they play an important role. As can be seen in Figures 2 and 3, opportunities and barriers for more sustainable supply chains were identified across all four quadrants. However, when stakeholders were asked to select the key barriers, the importance of the interior aspects was confirmed, as they mainly mentioned barriers related to the Upper-Left quadrant (a strong and singular focus on their own personal and organizational interests) or Lower-Left quadrant (e.g., failing relationships and collaboration, unproductive roundtable meetings, a lack of coordinated involvement of all actors).

Conclusion

In this article we set out to identify strategic improvement options that aim to increase the sustainability of fishery supply chains. We conducted a systems analysis based on the four quadrants of the Integral model, levels of development, and the double S-curve model. The double S-curve model identified two main curves, the curve of growth of MSC in the different channels and the newer and emerging curve of models that go beyond MSC (e.g., for issues such as feeding the world, mitigating contaminants, and the role of small-scale fisheries). From our analysis we identified both *translational* interventions, aligned to the current interests and worldviews of stakeholders, and *transformational* interventions, providing a challenge to the current interest and worldviews to enable further development. The interventions we identified are:

1. Promote further use of tools that enable supermarkets to protect their brand image and enable them to be as flexible as possible within their actions regarding sustainable seafood products. (*translation*)
2. Develop and execute experiments by supermarkets in which they play a more proactive role in making fishery supply chains more sustainable, which means 1) putting sustainability on the forefront instead of brand protection; 2) working with suppliers to improve the supply chain; and 3) using marketing strength to stimulate a more sustainable seafood sector. (*transformation*)
3. Support the development of initiatives that take into account the interests, values, and considerations of chefs to include or exclude sustainable fish in their menus. These initiatives should not only make it easier and less costly to choose sustainable seafood, but also make it more interesting to them. They should at least assure a quality perception and enable chefs to maintain the current relationship with their suppliers. (*translation*)
4. Confront chefs with the current situation of fisheries and ask them about the choices they make and values they hold in their private lives regarding sustainability, and stimulate and inspire them to apply those to their daily work. (*transformation*)
5. Develop tools for the financial sector that enable them to assess, communicate, and improve the sustainability performance of their seafood investments and credit provision activities. (*translation*)
6. Set up experiments in which financial institutions play a more serving and proactive role in the development of sustainable fisheries. (*transformation*)
7. Set up and learn from experiments that integrate both social and ecological aspects of sustainable fishery supply chains with small-scale fisheries. Learning should be focused on the effective and suitable ways of organizing and financing a sustainable fisheries supply chain with small-scale fisheries. It is also important to learn about ways to meet both the needs of the industrial and small-scale fisheries and manage their interdependence. (*transformation*)

It is important to note that effective collaboration between stakeholders (Lower-Left quadrant) is one of the key success factors for all of the interventions described above.

In our analysis of stakeholder worldviews, we found a broad spectrum of sustainability orientations ranging from compliance-driven to synergistic (Table 2). In our earlier research, within fishermen we also found indications of less complex value systems at red altitude (e.g., strong bonding on board, nature seen to be a mystery, the importance of luck). Among business actors further down the supply chain, including the financial sector, we found that the main orientation was profit-driven (orange altitude). Some leading wholesalers and retailers are exploring the path of care- and synergistic-driven orientations (green altitude), but there seems to be some dissonance with the current way of working that only requires suppliers to comply with standards and focus on reputation. Some openness and experimentation will be needed to work together with suppliers to improve sustainability performance (e.g., Albert Heijn with their "*Vis van Dichtbij*" initiative).

As mentioned above, the business organizations in the supply chain (wholesalers, retail, foodservice, and Horeca) are firmly ensconced in a profit driven-orientation. Therefore, interventions with a translational focus (interventions 1, 3, 5 above) will probably have the most impact. As leaders' views begin to evolve and life conditions put more pressure on the entire supply chain, it will be important to also initiate more transformational interventions and start small-scale experimentation to develop a new curve that focuses on care-driven and synergistic solutions (interventions 2, 4, 6, and 7 above). The Integral framework has the potential

to see the world in these ever more complex and inclusive ways (Forsberg & Forsberg, 2009).

We also noticed an emerging synergistic orientation within environmental NGOs that choose to work with sustainable fish companies (care-driven) or those that also support the change process toward sustainability within those companies (synergistic). More broadly, many NGOs are struggling with the issue of whether to focus only on environmental conditions and how to interpret social problems (i.e., as life conditions or as integrated and mutually interdependent issues).

In our research and in the strategic interventions we identified, the focus was not on consumers and developments in their orientation and worldviews. We did see more care-driven consumers in Western Europe than in Southern Europe and even less care-driven consumers in Asia. If more consumers start to move into a caring orientation and have the opportunity to consume according to their value systems, this will put more pressure on the different actors in the supply chain. With the ongoing global financial crisis, it is difficult to predict whether or not this will occur.

To summarize, it will be important to develop collaborations that are focused on getting concrete results and go "beyond talking," are flexible and dynamic in nature, are based on both collective aims and individual organizational interests, and have clear roles and responsibilities for all organizations involved based on the unique strengths and resources of each stakeholder. Only collaborations that meet these requirements will be able to create a positive and sustainable future for fishery supply chains.

NOTES

[1] See: http://www.msc.org/?i18nredirect=true&set_language=en.

[2] As developed by our colleague Rob Wetzels. For a detailed description, see Peters and Wetzels (2009).

[3] See: http://www.msc.org/newsroom/news/msc-acknowledged-as-only-fao-consistent.

[4] Current MSC figures can be found on their website: http://www.msc.org/business-support/key-facts-about-msc.

[5] English translation: *fish indicator*. See: http://www.goedevis.nl/.

[6] See, for example: Jacquet and colleagues' (September 2010) article on seafood stewardship in *Nature*. Some of the points of the critique mentioned here are: the fact that the objection procedure against certifying agencies is approached formally only; the fact that certification is still (under certain conditions) attainable for fisheries engaged in the catch of endangered species; and the disregard of small-scale fisheries (even those that operate in a sustainable manner).

[7] This insight is based on multiple interviews we conducted during our research project.

[8] See the yearly analysis that Greenpeace does on the status of sustainable fish in Dutch supermarkets: http://www.greenpeace.nl/Global/nederland/report/2010/5/Greenpeace%20MaakSchoonSchap%20analyse%202010%20DEF.pdf.

[9] Several Dutch supermarkets committed themselves to only sell MSC-certified fish by the end of 2011. As of October 2012, this goal has not been reached. According to the CBL, the Dutch supermarket organization, by the end of 2011 85% of fish sold in Dutch supermarkets was sustainable. The CBL mainly blamed not reaching the goal on the lack of sufficient supply.

[10] See: http://www.coop.ch/pb/site/nachhaltigkeit/node/64228363/Len/index.html, and http://www.carrefour.com/cdc/responsible-commerce/our-commitment-to-the-environment/developing-responsible-products/?com.carrefour.cdc.print.page.content=true, and http://www.walmartstores.com/media/factsheets/fs_2248.pdf.

[11] Albert Heijn: http://www.evmi.nl/nieuws/marketing-sales/7498/'vis-van-dichtbij'-bij-ah.html. Marqt: http://www.marqt.nl/. Landmarkt: http://www.landmarkt.nl/.

[12] This includes consumption in canteens at work or school.

[13] See: http://www.visenseizoen.nl/.

[14] This campaign ran at the end of 2010. For details, see: http://www.wnf.nl/nl/wat_wnf_doet/thema_s/oceanen_en_kusten/duurzame_vis_op_de_kaart/.

[15] See: http://www.goodcatch.org.uk/.
[16] It would be interesting to find out from what motivation or orientation these chefs developed their interests.
[17] For the Dutch policy on *Duurzaam inkopen*, see: http://www.rijksoverheid.nl/onderwerpen/duurzaam-inkopen.
[18] See: http://www.albron.nl/551616/Duurzamer-Ondernemen-Magazine-Albron-editie-2012.pdf?v=0, and http://jaarverslag2010.bysodexo.nl/m/magstream/sodexo/jaarverslag2010/#/14/Duurzame-visserij.
[19] This initiative aims to support investors to integrate environmental, social, and governance considerations into investment decision-making and ownership practices, thereby improving long-term returns to beneficiaries.
[20] See: http://www.sustainablefinancelab.nl/.
[21] To quote *Plan B*: "With some 36 percent (750 million tons) of the world grain harvest used to produce animal protein, even a modest gain in efficiency can save a large quantity of grain." And: "As both the oceanic fish catch and the production of beef on rangelands have leveled off, the world has shifted to grain-based production of animal protein to expand output" (pp. 226-230). For some herbivorous species of farmed fish (such as carp, tilapia, and catfish), it takes roughly less than two kilograms of grain to produce a one kilogram gain in live weight. This is much less than, for example, the figure for cattle in feedlots, which is seven. For pork, the figure is over three kilograms of grain per kilogram of weight gain, and for poultry it is just over two.
[22] For example, see Stefan van Leeuwen's (2009) article in *Environmental Science and Technology*. Also see: Dewailly (2012) and Tran (2012).
[23] See: http://www.fao.org/docrep/012/i1227t/i1227t00.htm.
[24] See: www.ascworldwide.org.
[25] Author Ard Hordijk is currently involved in an initiative that aims to develop a sustainability rating of seafood companies for the financial sector, one of the new interventions options identified.

Appendix A

Research Issues Identified as Relevant for Sustainable Fishery Supply Chains and Growth of the MSC Label

What Works	What Does Not Work
• Market involvement and partnerships • EU requirements are pushing governments to set up monitoring and control initiatives • Market exists for sustainable fish • Overexploitation is becoming obvious to fishermen, consumers, and buyers • Pre-assessment for MSC functions as a gap analysis tool • Consumer awareness is high in Western Europe • Retail brands are vulnerable to reputation • There are many sustainability initiatives with small-scale fisheries worldwide • Carrefour and other large retailers are investing in Southeastern Asia, thus consumer awareness might rise ("modern retailing") • Market mechanism: scarcity -> high price -> less demand -> more stocks • Security of supply is starting to become a problem, so action becomes more urgent • Sustainable small-scale fisheries create social and economical value • Development of standard for aquaculture that includes social aspects (ASC) • Input efficiency of farmed (vegetarian) fish	• Consumers are not willing to pay extra • No demand for sustainable seafood in Asia • No market for sustainable seafood in Southern Europe • Government is only representing the interests of the industry • Consumers interested in sustainable fish is still niche in Western Europe • Lack of money for small-scale fisheries to become certified • Lack of knowledge and information of small-scale fisheries on stocks • No management system for small-scale fisheries • Chinese and Russian trawlers catch all fish off the coast of Guinea-Bissau; no control mechanisms, marginalized small-scale fisheries • Stock data is not interpreted consistently • Social economic value that is created is not valued in the market (e.g., Gambia) • Fiscal dependency of fishermen in the supply chain (the middlemen) • Fear among fishermen • Consumer choice (confusion, high price, inconsistent labeling) • Limited exchange of information and lessons learnt worldwide, which leads to inefficiencies • Each stakeholder only aims for their own mandates and interests • The gap between MSC and no sustainable fish is too large for retail and wholesalers; more flexibility and intermediate steps are needed • Retail does not invest in making supply chains more sustainable, only puts down requirements • No requirements on the quality of the fish within ecological trademarks • Lack of attention for sustainable fisheries in hotels and restaurants; fishmongers; food service industry • Lack of pressure on wholesalers and fisheries from the financial sector, including a financial analysis of overfished situations • Health aspects related to consumption of fish (accumulation of toxins) • Role of fish in feeding the world • Lack of coordinated involvement of all stakeholders • Focus of NGOs on what is not sustainable instead of supporting what is becoming more sustainable

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