



SEAFOOD STEWARDSHIP INDEX

Introduction, rationale, and scope

INTRODUCTION

In September 2015, the 2030 Agenda for Sustainable Development and corresponding goals (SDGs) and targets were adopted by all 193 UN Member States. Success of the Agenda 2030 requires implementation by governments, but they are unlikely to succeed without broad societal participation and engagement of the private sector. Contrary to the agenda that supported the achievement of the Millennium Development Goals (MDGs), the SDG agenda recognizes the pivotal role of the private sector. With increasing globalization, companies are now, more than ever, able to deliver a unique and significant contribution to the achievement of the SDGs.

The specific contribution of the private sector to the SDGs will strongly differ from industry to industry. This creates a clear need to move beyond the term *private sector* to an approach that is more industry and company specific. By formulating clear expectations for each industry that align with their core business, contribution to the SDGs and progress can be monitored and companies can be held accountable.

Based on Index Initiative's landscape study [Unraveling the Role of the Private Sector](#), the seafood industry was selected for a full feasibility study as it is uniquely positioned to contribute to achieving SDGs 2 (zero hunger) and 14 (life below water) and has interlinkages with SDG 1 (no poverty), SDG 5 (gender equality), SDG 8 (decent work and economic growth), SDG 12 (responsible consumption and production) and SDG 15 (life on land).

With support of the Dutch Government, Index Initiative conducted a feasibility study to assess the added value of creating a *Seafood Stewardship Index*, ranking the world's top 20 – 30 seafood companies on their policies, commitments, and performance in delivering sustainably produced seafood. Based on this feasibility study, Index Initiative has concluded that there is a strong case for developing this Index.

ABOUT INDEX INITIATIVE

Index Initiative is a non-profit organization based in Amsterdam, the Netherlands and develops indices that encourage and inspire companies to contribute to positive change. Through an extensive multi-stakeholder process, an index helps to clarify and reach consensus on societal expectations from leading industries in terms of their contribution to achieving the SDGs. The subsequent measurement process reveals the extent to which individual seafood companies meet these expectations.

By comparing companies to one another, an index rewards good practice and provides a transparent and impartial means by which companies can monitor their own performance and that of their peers. By identifying best practices and areas for improvement, an index encourages companies to do more and spurs advancements in areas most needed. Indices have proven to be useful tools for different stakeholder groups – e.g. investors, banks, governments, multilateral organizations, NGOs, academia, and buyers – that seek greater transparency and clarity on policies, commitments, and performance regarding key sustainable development topics.

The [Access to Medicine Index](#), first published in 2008, is an excellent example of the positive influence an index can have on stimulating companies to play a bigger part in addressing societal needs. Another index that Index Initiative draws inspiration from is the recently launched [Access to Seeds Index](#).

THE SEAFOOD STEWARDSHIP INDEX

Growing global demand for seafood has caused the major depletion of fish stocks and the degradation of many ecosystems over the second half of the 20th century. Today, overfishing is considered the second largest global threat to the oceans after climate change. This marine 'defaunation' and the overall effects of overfishing on marine ecosystems carry long-term risks. Besides the ecological consequences of overfishing, it also reduces seafood production which further exacerbates socioeconomic consequences, especially for the millions of people whose livelihoods depend on seafood. An estimated 200 million people are directly or indirectly employed in the seafood industry, for example as workers on industrial fishing vessels, in processing factories, or as a small-scale fishermen. A further 950 million depend on seafood as their primary source of protein and represents an important part of the diet of many more.

In response to the growing demand for seafood and declining marine fish stocks, aquaculture is booming and has surpassed wild-caught fish in terms of worldwide consumption. Aquaculture, compared to capture fisheries, has its own set of sustainability issues. These issues can often be compared to those of intensive livestock production, such as land-use changes and rights, disease control, feed conversion, and pollution of water and adjacent terrestrial ecosystems.

In addition, the seafood supply chain is at high risk of labor and human rights violations. Modern day slavery is known to occur in marine fisheries to an alarming degree. Such violations often coexist with illegal, unreported, and unregulated (IUU) fishing operations.

Despite these challenges, there is a huge potential for wild-caught fisheries and aquaculture to contribute to sustainable development. Major fish stocks can be rebuilt, aquaculture offers opportunities for technological advancements, and better supply chain management would contribute to the improvement of working conditions and livelihoods. Seafood companies have an important role in enabling the transition to a more sustainable seafood production system. However, most companies in the industry are opaque about their policies and practices, making it difficult to assess their contribution to more sustainable and responsible seafood and seafood supply chains. In addition, the awareness and the understanding of the role of major seafood companies in improving the sustainability of seafood has been poorly understood. An index can advance this awareness and understanding by showing what companies are able to do and what they are currently doing. It will give credit to companies that show strong performance while putting pressure on underperforming seafood companies to improve in areas where they fail to demonstrate good performance. By highlighting best practices, the Index will stimulate learning across the industry and will accelerate the uptake of best practices.

We believe an index can be a useful tool for a broad range of stakeholders that engage with the seafood industry. For example, financial institutions and seafood buyers can use the results of the Index in their engagement activities with seafood companies in which they hold stocks, to which they provide finance, or from which they source their seafood products. Civil society organizations and governments can use the Index to identify and engage with companies that have a significant influence on the impact areas that are closest to their own focus.

SEAFOOD TRADE, CONSUMPTION AND PRODUCTION

TRADE

Seafood, both from wild and farmed sources, is the largest globally traded food commodity by value in the world and one of the most valuable internationally traded non-petroleum products. International seafood trade has grown significantly, with exports rising from \$8 billion in 1976 to \$148 billion in 2014 [1]. About 36% of fish production was exported (live weight equivalent) in different product forms for human consumption or non-edible purposes in 2014 [1]. More than half of international trade originates in developing countries and their share in fishery trade is increasing steadily. In 2014, developing countries were responsible for 54% of total fishery exports by value and more than 60% by quantity (live weight) [1].

International trade in seafood is biased towards species that represent a high value (e.g. shrimp) and/or high volume (e.g. pangasius). Trade in these species is increasingly dominated by globally operating seafood companies that link distant species and ecosystems to international markets and consumers [2]. The revenue of the world's 20 largest seafood companies is more than 50% of the turnover of the global top-100 seafood companies [3]. This represents one third of the total value of global seafood exports. Companies have varying product portfolios, ranging from one dominant fish species (e.g. salmon) to a wide range of fish species. Some companies are primarily trading houses, while others are vertically integrated, having activities ranging from fishing and farm operations to the marketing of branded consumer products.

A recent study by the Stockholm Resilience Centre estimated that 13 corporations control 11-16% of the global marine catch (9-13 million tons) and 19-40% of the largest and most valuable stocks, including species that play important roles in their respective ecosystem [4].

Figure 1: Global seafood production



CONSUMPTION

Data of the United Nations Food and Agriculture Organization (FAO) shows that in 2013, 140.8 million tons of seafood was available for human consumption. Fish consumption per capita has more than doubled, increasing from 9.9 kg in the 1960s to 19.7 kg in 2013, with preliminary estimates for 2014 and 2015 indicating growth beyond 20 kg [1]. Increasing demand for seafood is driven by global population growth, rapid urbanization, and rising living standards, together with a shift towards healthier eating habits.

PRODUCTION

Strong demand for seafood drives growth in production. It is estimated that by 2030 an additional 20 to 25 million tons of seafood is required to meet the growing global demand [5]. However, almost 90% of fish stocks are estimated to be fished at biologically unsustainable levels and are therefore overfished or fully fished [1]. Although in North America, Europe, Japan and some other regions fleets are being downsized to ensure that wild fish stocks can be exploited at more sustainable levels to allow wild biomass to regrow, the problem of IUU is still rampant. It is estimated that IUU fishing is as high as 30% of global catches [6].

To fulfill the growing demand for seafood, most growth must result from aquaculture. This sector has been the fastest growing protein sector for the last 20 years, growing at an average of 8% annually [7]. Aquaculture production is concentrated in Asia, where almost 90% takes place, most of it within the tropical and subtropical belts [1]. The strong growth in demand for seafood products has led to the rapid expansion of aquaculture production driven by short-term economic considerations. In the absence of appropriate regulatory frameworks and governance, this has contributed to problems like ecosystem destruction, excessive use of synthetic inputs, and waste management problems. In addition, disease outbreaks can wipe out entire production areas in a relatively short time span, leading to significant financial losses and shocks in supply [8]. Furthermore, fishmeal and fish oil, produced from wild-caught

small pelagic species, are important ingredients in aquaculture feed, particularly for the farmed carnivorous finfish and crustacean aquaculture sectors. The degree to which this impacts marine ecosystems depends on the share of fishmeal and fish oil as part of the feed mix, the feed conversion rate, and the sustainability of the fishery that catches the fish used to produce the fishmeal and oil.

NGOs and the media have successfully brought themes such as IUU fishing, overfishing, destructive fishing methods, bycatch, and labor and human rights violations to the attention of the general public, governments, and retailers. As a result, governments and companies, particularly in North America and Europe, have stepped up their efforts and consumer attention to sustainable seafood is growing. In addition, this has contributed to the emergence of independent sustainability schemes for both marine fisheries as well as aquaculture production (e.g. MSC, BAP, and ASC certification programs) and has led major retailers and brands to make sustainable and responsible sourcing commitments for their seafood products. As a result, certified production reached 23 million metric tons in 2015, accounting for 14% of the global seafood production, up from 0.5 million metric tons (0.5% global production) in 2003 [9]. This represents a combined estimated retail value of \$11.5 billion, mainly driven by manufacturers and retailers in developed-country markets. It should be noted that many seafood certification standards are primarily focused on environmental integrity and there currently exists a lack of certification standards that also take social compliance into account.

Increasingly, traceability is becoming a key consideration for seafood buyers, such as food retailers and food processing companies. To ensure seafood supply chains are free from unsustainable practices, IUU fishing, and human rights and labor abuses, traceability should extend down to fishing vessels supplying raw materials to fishmeal producers, evidencing inspections of catch and crew [10]. Although steps are being made, it is often difficult to trace where fish is caught or harvested and thus whether slave-caught or unsustainably harvested fish ends up in the supply chain of food processing companies, supermarkets, and restaurants [11]. However, if seafood companies want to succeed in the future, they increasingly will have to demonstrate stewardship of their supply chains.

PROPOSED COMPANY SCOPE

The Seafood Stewardship Index proposes to include the world's 20 – 30 largest seafood companies as measured by seafood-related turnover. These companies represent a significant share of the global seafood market and often set the norm for other companies in the sector. Companies that have their own fishing and/or aquaculture production operations, as well those that are exclusively involved in trading activities, are included. Trade in this context refers to the buying and selling of seafood that has been harvested or farmed by a third party. Some of the companies included have branded products as part of their product portfolio however, the majority of seafood is sold non-branded through retailers, fast moving consumer goods companies, and food service companies, with the exception of canned tuna.

Feed companies, like Cargill and Nutreco, that buy substantial amounts of fishmeal and fish oil, do not qualify as a top 30 company when their revenue is corrected for the share of non-marine resources in their products (which also include products such as soy and by-products from slaughterhouses). The Index focuses on companies that both source from and distribute to international markets. Trading houses that exclusively serve the Japanese market have therefore been excluded from this list. Retailers and food service companies will not be included as they usually do not trade nor have any fishing or aquaculture operations.

Different business models exist for different companies active in different production systems (aquaculture or fisheries), species, and different parts of the seafood value chain. The seafood industry is witnessing increased globalization and integration. Although small-scale players that are fragmented across continents and markets still constitute a significant part of the industry, companies are becoming increasingly larger and more integrated into the value chain [12]. The industry has seen the emergence of large 'system trading companies' that control most of the infrastructure, ranging from providing fuels to fishing vessels to marketing seafood brands. Many large seafood companies are now pursuing vertical integration strategies and are expanding abroad to gain access to new markets and improve their competitive position. Increasing consolidation in the food retail sector further stimulates consolidation and integration in the seafood sector, as it enables seafood companies to improve their bargaining position with food retailers and facilitates the means to offer retailers a diverse range of services [12] [13]. Furthermore, it gives companies greater control over production costs and allows for greater traceability of end products.

The revenue of the top 30 companies included in the initial scope represents over 38% of the international trade in seafood products. Volume figures would give a much more reliable figure about the share of the international trade these leading companies represent but such data is currently unavailable. The Index would be a first attempt to create this data.

The top 30 seafood companies trade in over 200 seafood species. The majority of traded seafood species fall into the following categories: groundfish, small pelagics, large pelagics (including tuna), shellfish, salmonids, farmed white fish and cephalopods. The matrix below indicates for each company whether it has any activities in these particular categories, which range from production to sales. The matrix demonstrates that most companies have activities in a wide range of categories and species, although there are some exceptions. Depending on their species portfolio, companies face different sustainability risks and challenges. Stakeholder roundtables will further provide input on whether a species scope should be included.

Table 1: Top 30 company revenue, country of origin, ownership and product portfolio [14]

	Name	Revenue in \$m (2015)	Country of Origin	Ownership	Ground-fish	Small Pelagics	Large Pelagics	Shellfish	Salmonids	Farmed White Fish	Cephalopods
1	Maruha Nichiro	7,867	Japan	Public	•	•	•	•	•	•	•
2	Nippon Suisan Kaisha (Nissui)	5,665	Japan	Public	•	•	•	•	•	•	•
3	Thai Union Group	3,477	Thailand	Public		•	•	•	•		
4	Mitsubishi Corporation	3,300	Japan	Public			•	•	•	•	
5	Marine Harvest	3,187	Norway	Public	•			•	•	•	
6	Dongwon Enterprise	2,910	South Korea	Public		•	•	•	•		
7	Red Chamber Group	2,550	US	Private	•		•	•	•	•	•
8	Kyokuyo	2,015	Japan	Public		•	•	•	•		
9	Marubeni Corporation	2,000	Japan	Public	•	•	•	•	•		
10	Austevoll Seafood	1,742	Norway	Public	•	•	•	•	•	•	•
11	Trident Seafoods	1,550	US	Private	•	•	•	•	•	•	
12	Sojitz	1,400	Japan	Public			•	•			
13	Pacific Seafood Group	1,350	US	Private	•	•	•	•	•	•	•
14	Tri Marine International	1,300	US	Private		•	•				•
15	F.C.F. Fishery	1,300	Taiwan	Private		•	•			•	•
16	Shanghai Fisheries General Corporation	1,078	China	State-			•	•			•
17	High Liner Foods	1,002	Canada	Public	•		•	•	•	•	•
18	Bumble Bee Foods	980	US	Private		•	•	•	•	•	
19	Labeyrie Fine Foods	951	France	Private	•	•	•	•	•	•	•
20	Yokohama Reito (Yokorei)	902	Japan	Public	•	•	•	•	•		•
21	Wales Group (Sea Value & Sea Wealth)	900	Thailand	Private		•	•	•		•	•
22	Parlevliet & Van der Plas	885	Netherlands	Private	•	•	•	•			
23	Nomad Foods	867	UK	Public	•				•		
24	Young's Seafood	866	UK	Private	•	•		•	•	•	•
25	Calvo Group	860	Spain	Private	•	•	•		•		
26	Nueva Pescanova	857	Spain	Public	•		•	•	•	•	•
27	SalMar	838	Norway	Public					•		
28	Hanwa Foods	806	Japan	Public		•		•	•		
29	Bolton Alimentari	787	Italy	Private		•	•		•		
30	Andrew Marr International	759	UK	Private	•	•	•	•	•	•	

IMPACT AREAS IN SCOPE

The impact of seafood companies is broad, ranging from social to environmental issues and from local to global issues. In order to capture the diversity of issues in a manner that is internationally accepted, the Seafood Stewardship Index intends to follow ISO 26000 standards [15] in its *principles* and *core subjects*. The seven key principles underlying ISO 26000 are *accountability, transparency, ethical behavior, respect for stakeholder interests, respect for the rule of law, respect for international norms of behavior, and respect for human rights*. These principles align with the expectations that stakeholders have regarding seafood companies.

The core subjects – as outlined in ISO 26000 – proposed to include in the Index are: *environment, human rights and labor practices, community involvement and development, and fair operating practices*. These impact areas combined can be linked to SDG 2 (zero hunger), SDG 14 (life below water), SDG 1 (no poverty), SDG 5 (gender equality), SDG 8 (decent work and economic growth), SDG 12 (responsible consumption and production), and SDG 15 (life on land).

Based on desk research, interviews with stakeholders, and the industry itself to date, the following key impact areas for the seafood industry have been identified: environment (ecosystems), human rights and labor practices, community engagement (livelihoods), and fair operating practices. Stakeholder dialogues prior to and during the methodology development phase will help to further define the most substantial and urgent issues for the seafood industry that need to be addressed by the Seafood Stewardship Index.

NOTE: *Consumer facing issues* such as fraudulent labeling behavior have not been explicitly addressed during the desk research. Consumer issues naturally do exist in the seafood industry but their impact on the SDGs is limited and therefore also their relevance to the Seafood Stewardship Index. *Organizational governance* (corporate governance) refers to internal processes and is not an impact area by itself for the Seafood Stewardship Index. The way companies deal with the governance of sustainability will nevertheless be an important measurement area in the Seafood Stewardship Index.

ENVIRONMENT (ECOSYSTEMS)

Global demand for seafood has caused the major depletion of fish stocks and the degradation of many ecosystems. Today, overfishing is generally considered the second largest global threat to oceans after climate change. In 2014, almost 30% of wild fish stocks were considered overfished, 60% were fully exploited, and only 10% could be expected to allow further growth [16].

Besides the ecological consequences of overfishing, it also reduces seafood production, further exacerbating socioeconomic consequences, especially for the millions of people whose livelihoods depend on seafood. The World Bank estimates in their Sunken Billions report that the foregone economic benefit of suboptimal managed fisheries in 2012 was \$83 billion globally [17]. However, these global figures do not acknowledge the fact that there are stark regional differences. Some governments have – often in cooperation with the industry – successfully managed to reverse the trend in their own territorial waters. This ensures that the seafood industry can remain a viable and profitable business and important source of nutrition for future generations.

Aquaculture is booming and has overtaken wild-caught fish in terms of worldwide consumption. However, aquaculture has its own set of sustainability issues such as feed conversion, land-use rights, disease control, and the pollution of water and adjacent terrestrial ecosystems. This is well illustrated by examples from the shrimp industry, where the expansion of shrimp farming has led to the clearance of mangrove forests and the outbreak of disease epidemics, causing significant economic losses for the often small-scale farmers that dominate shrimp farming. This relates to a second major challenge for the aquaculture industry: the control of pests and diseases in a way that does not imply the overuse of antibiotics and chemicals. Overuse can lead to antibiotic resistance, food safety issues, and pollution of local ecosystems. This is highly challenging for both small-scale and large-scale producers in nearly all types of aquaculture systems.

In conjunction with the ISO 26000 framework, the Seafood Stewardship Index will build on the FAO Code of Conduct for Responsible Fisheries and its associated guidelines and reference document. This Code of Conduct sets out principles and international standards of behavior for responsible practices to ensure the effective conservation, management, and development of seafood, with respect for ecosystems and biodiversity [18]. Specific issues that have been raised with regard to ecosystems and environment by stakeholders during interviews conducted for this feasibility study include the following:

Table 2: Environmental issues related to aquaculture and wild catch

Aquaculture	Wild Catch
<p><i>Land-use changes</i> Land-based aquaculture often competes with naturally occurring ecosystems and agriculture. For example, shrimp production in the coastal ecosystems of Bangladesh has led to the clearance of mangrove forests and rice fields in Vietnam's largest inland aquatic ecosystem, the Mekong Delta, which have been converted into fishponds to produce pangasius.</p>	<p><i>Stock status</i> The <i>harvestable surplus</i> is the number of animals (usually expressed as metric tons) that can be harvested from the fish population without affecting long-term stability (average population size). The economic optimum between fishing effort and harvest, without impacting the long term sustainability of a stock, is referred to as Maximum Sustainable Yield (MSY). If fish yields exceed these limits because quota are set too high, poorly enforced, or absent, fish stocks risk collapse. The health of fish stocks should, in addition, be assessed within its wider ecosystem as there can be multiple factors that influence the population dynamics of fisheries, including other anthropogenic drivers like fertilizers runoffs, habitat degradation, invasive species, and climate change. The principles for assessment are outlined in the Code of Conduct for Responsible Fisheries, published by FAO in 1995. However, national implementation of the Code lags behind.</p>
<p><i>Feed input and conversions</i> Feed is a critical input for most types of aquaculture (mollusks and algae are exceptions). The degree to which this impacts marine ecosystems depends on the share of fishmeal and fish oil as part of the feed mix, the feed conversion rate, and the sustainability of the fishery that catches the fish used to produce the fishmeal and oil. These factors vary strongly between species and regions. The feed for tilapia production contains little fishmeal and fish oil and has a favorable conversion rate while the feed conversion rate for 'ranched' Bluefin tuna can be as high as 20 to 1, meaning that it requires 20 kilograms of wild-caught fish to produce one kilogram of Bluefin tuna.</p>	<p><i>Fishing methods and bycatch</i> In addition to the quantity of fish harvested, the method by which fish are caught greatly influences the way in which fisheries impact ecosystems. Fishing methods that generate high levels of bycatch (e.g. shrimp trawlers), harm seafloor habitats (e.g. bottom trawling), or risk losing large amount of fishing gear (e.g. long lines and drift nets) are generally less sustainable than methods that can avoid such impact such as pulse trawling. Furthermore, fisheries can negatively impact endangered, threatened, and protected (PET) species populations such as sea turtles, seabirds, and endangered fish species.</p>
<p><i>Pollution</i> Aquaculture requires various inputs like feed, antibiotics, and chemicals. As the majority of aquaculture production systems are open and in direct connection with inland or coastal water systems, this leads to 'runoffs' of both the used inputs as well as fish manure. This can create serious impacts on the surrounding ecosystems. Impacts differ between species and culture location but can be grouped in three major impact areas:</p> <ol style="list-style-type: none"> 1. Eutrophication: creates hazardous algal blooms and reduces the available oxygen in the receiving water body due to excess nutrient runoffs. An example of this is tropical coastal regions where the number of farms exceeds the carrying capacity of the ecosystem. 2. Benthic impact: the impact on bottom ecology. This is particularly relevant for coastal marine aquaculture (e.g. salmon farming) which can create biological 'death zones' resulting from the large amounts of nutrient and sludge deposits. 3. The excessive use of antibiotics and chemicals in aquaculture creates the risk of antimicrobial resistance for both fish and humans, as well as potentially other long-term effects on aquatic ecosystems that are still poorly understood. This is a particular concern in tropical shrimp farming, but is also not uncommon for other species like pangasius and salmon. 	
<p><i>Escapes</i> A growing body of evidence demonstrates the negative impacts of the escape of some aquaculture species. The introduction of native or non-native escapees from aquaculture sites can threaten ecosystem integrity [19].</p>	
<p><i>Diseases</i></p>	

Depending on the production system, elevated levels of pathogens and parasites can represent a risk to wild species that reside in or pass through areas in which the farms are located and to neighboring aquaculture sites [19]. The large number of fish kept in small areas provides an environment conducive for the development and spread of infectious diseases.	
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HUMAN RIGHTS AND LABOR PRACTICES

Sustainability concerns in the seafood industry have focused mainly on the ‘fish’ and relating ecosystems, while the human element in the supply chain has often been overlooked [20]. This changed when a major seafood supply chain scandal was revealed in 2014, showing Thai fishing boats that enslave and even kill workers were linked to the global shrimp supply chain [21]. More scandals were revealed in 2015, showing the abuse of men aboard Thai fishing vessels and linking slave-caught fish and slave-peeled shrimps from Southeast Asia to major seafood corporations, food companies, grocery stores, and restaurants¹.

Human rights violations in the industry take place around the globe and cases of modern day slavery in the industry have been recorded worldwide. The US Department of Labor lists 13 countries for which it has reason to believe that seafood products are produced with child labor or forced labor in violation of international standards. These countries include countries in Asia, Africa, and Latin America [22]. The amount of unskilled labor required, together with a high level of migrant workers active in the seafood industry, creates high risks in terms of labor (including gender-related) issues and human rights violations. Overfishing has generated economic pressures which can fuel the use of forced and slave labor. As a result of overfishing, vessels have to stay at sea longer and venture further for ever-diminishing returns. In turn, it has been found that operators use human trafficking networks to crew their vessels at lower costs [10]. Recruitment in the seafood industry is largely based on informal recruitment processes, which can lead to abuse and foster human trafficking. Migrant workers are particularly vulnerable: deception and coercion by brokers and recruitment agencies is common practice, forcing migrants to work on fishing vessels under the threat of force or by means of debt bondage [23].

Human rights abuse – including forced labor, child labor, and human trafficking – is often linked to illegal, unreported, and unregulated (IUU) fishing and other forms of crime, such as transnational organized fisheries crime and corruption [10] [24] [23].

These issues can occur in the supply chains of the seafood companies in scope. Seafood supply chains can be long and extend over multiple continents and countries, making the monitoring and responsible management of supply chains complex and challenging. The Seafood Stewardship Index intends to assess company performance in the domain of human rights and labor practices in accordance with the UN Guiding Principles on Business and Human Rights and, for example, those developed by the International Labour Organization (ILO), specifically C188 - Work in Fishing Convention, 2007. Specific issues that have been raised in this regard during the stakeholder interviews include the following:

Table 3: Human rights and labor issues related to aquaculture and wild catch

<p><i>Working conditions</i></p> <p>Working conditions can be hazardous and occupational health and safety remains challenging in seafood supply chains, most notably those on board of fishing boats, aquaculture farms, and processing units. The role of women, who make up the vast majority of the workforce in most seafood processing plants, can be particularly vulnerable.</p>
<p><i>Forced labor and child labor</i></p> <p>The majority of employment created by the seafood industry requires low or unskilled labor. The use of forced labor (often migrant workers) and child labor within the supply chains is known to occur regularly, particularly in Southeast Asia. While recent reports and media coverage have mainly focused on Thailand, these misconducts extend well beyond Thai waters and factories and occur throughout the world. Forced and slave labor is an issue within seafood value chains and an example of serious illegal practice [25]. Specific international guidelines exist (ILO Convention 188 - Work in Fishing Convention, 2007) but are not ratified and poorly implemented and enforced.</p>

¹ Over the course of 18 months four journalists with The Associated Press have investigated slavery in the seafood supply chain. See <http://www.ap.org/explore/seafood-from-slaves/>

<p><i>Women's rights</i></p> <p>Women play important roles in the fisheries and aquaculture value chain and participate in all segments of the seafood industry. Women directly engaged in primary production account for over 15% of people engaged in fisheries and aquaculture, but 90% of those engaged in processing activities [1]. The work women engage in is often low-paid or unpaid with unofficial status. This creates barriers to access financial resources and policy support for women. There is evidence that the working participation of women in the sector is constrained or affected by strong cultural laws, societal convention, and – in some cases – by discriminatory laws. Women often face constraints and discrimination in the sector [26].</p>
<p><i>Social dialogue and workers' organizations</i></p> <p>Strong workers' organizations (unions) and social dialogue between workers and employers in all its forms are essential for creating and ensuring decent working conditions. If these organizations and dialogue are absent, the risk of human and labor rights violation increases. This risk is particularly high in countries where freedom of association is challenged by governments and/or the industry itself.</p>

COMMUNITY ENGAGEMENT (LIVELIHOODS)

The seafood industry provides employment opportunities – both directly and indirectly – to 200 million people [27]. A further 950 million depend on seafood as their primary source of protein and represents an important part of the diet of many more, particularly in developing countries [28]. Of the estimated 56 million people engaged in the primary sector of capture fisheries and aquaculture, 84% is in Asia, followed by Africa (almost 10%) and the Caribbean (4%) [1]. Small-scale operations play a critical role in supporting (rural) livelihoods, contributing to food security, and alleviating poverty [1]. Large-scale, export-oriented fishing and aquaculture can create an additional source of income for communities involved in these activities through the creation of jobs or by improving market access. The industry can also be a source of distortion and conflict if communities and large-scale commercial actors compete for the same natural resources [16].

Wild-caught (capture fisheries) and farmed (aquaculture) seafood jointly provide 17% of the global populations' intake of animal protein and 6.7% of all protein consumed [16]. In low-income, food-deficit countries (LIFDCs) fish contributes on average 25% to animal protein intake and can even exceed 50% in several small island developing nations [16]. Furthermore, fish contains several amino acids that are essential for human health and the lipid composition of fish is unique as it has long-chain, polyunsaturated fatty acids with many potentially beneficial effects for both adult health and child development. Fish is an important source of essential micronutrients – vitamins A, B, D, and minerals (including calcium, iodine, zinc, iron, and selenium) [29]. Even small quantities of fish can have a significant positive nutritional impact on plant-based diets, which is the case in many LIFDCs and least developed countries (LDCs) [1].

The Seafood Stewardship Index intends to assess company performance in the domain of community engagement accordance with the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries and the OECD-FAO Guidance for Responsible Agricultural Supply Chains [30]. Specific issues that were raised during the interviews with stakeholders include the following:

Table 4: Livelihoods issues related to aquaculture and wild catch

<p><i>Natural resource conflicts</i></p> <p>Commercial fishing and aquaculture can compete with local (fishing) communities over natural resources such as fish stocks, land, and fresh water. The 'classic' conflicts are those between international fishing fleets that compete with local fishermen for the same fish species. In aquaculture, similar conflicts can emerge when expansion of aquaculture puts a claim on land and water resources in (often densely populated) coastal or delta areas.</p>
<p><i>Employment and market dynamics</i></p> <p>Commercial aquaculture and fisheries can create employment and generate additional income sources by creating jobs and improving market access. It can, however, undermine employment and market access when it deprives local fishermen of their income by depleting coastal fish stocks or by landing large quantities of fish that push down prices of locally caught and consumed species.</p>
<p><i>Food and nutrition security</i></p> <p>Seafood production greatly contributes to food and nutrition security on a global level. However, large-scale fishing and aquaculture can undermine the local availability, accessibility, and utilization of highly nutritious seafood or other agricultural products. It can often be challenging for poor fishing communities to purchase foodstuffs with similar nutritional value.</p>

FAIR OPERATING PRACTICES

Despite meaningful steps taken by governments – on national, regional, and international levels – the challenge of protecting marine and inland aquatic ecosystems from the negative effects of fishing and fish farming activities persists today. Human rights violations and decent working conditions have only recently been put on the agenda for the

industry. The inherent complexities related to international seafood supply chains and marine and inland aquatic ecosystems create local and international governance challenges.

The great heterogeneity of actors – ranging from local fishing communities to large, multinational companies – competing for the same resources further contributes to the complexity. The role of non-state actors like companies and civil society organizations is becoming more important with regards to the governance of marine and inland aquatic resources. This leads to new global governance arrangements that seek to give a voice to civil society organizations and put greater responsibility on private sector actors.

The Seafood Stewardship Index intends to assess whether companies uphold ‘fair operating practices’ as outlined by organizations such as the FAO, UN Global Compact, and the OECD Guidelines for Multinational Enterprises. Specific issues that were raised during the interviews with stakeholders regarding fair operating practices in the seafood industry include:

Table 5: Issues related to fair operating practices in the seafood industry

<p><i>Legality and compliance</i></p> <p>Complying with regulatory frameworks remains a challenge for the industry, especially in countries where regulatory frameworks and enforcement are weak. Non-compliance has severe impacts on ecosystems and livelihoods as it undermines efforts to improve the sustainability of the industry. The following areas in particular require attention:</p> <ul style="list-style-type: none">• IUU fishing is as high as 30% of global catches [6]. For tuna in the Pacific Ocean alone, the value of illegally harvested or transshipped tuna is estimated to exceed \$600 million a year [31].• In aquaculture, conflicts over land are frequently reoccurring as a result of the rapid expansion of aquaculture and lack of formalized land rights and entitlements. Aquaculture often takes place in sensitive habitats, like mangrove areas, where illegal expansion of farms has a particularly damaging impact.
<p><i>Tenure and concessions</i></p> <p>Free and open access to fishing areas is generally damaging for ecosystems, as there is no conservation incentive. A territorial use right in fisheries can remove, to a greater or lesser extent, the condition of common property. Governments have the duty to safeguard the interests of all stakeholders, including those of local communities and indigenous peoples. It should consider the interest of these communities and hold consultations with them before it allocates fishing concessions, rights, or licenses or before it grants land tenures for aquaculture farms. This is also referred to as free, prior, and informed consent (FPIC). In addition, it is the responsibility of businesses to respect human rights and this responsibility exists independently of states’ abilities and/or willingness to fulfill their own human rights obligations. Many of the voluntary standards in the private sector require that companies obtain FPIC of both indigenous peoples and local communities prior to proposed developments.</p>

COMPANY ASSESSMENT AND COMPARISON

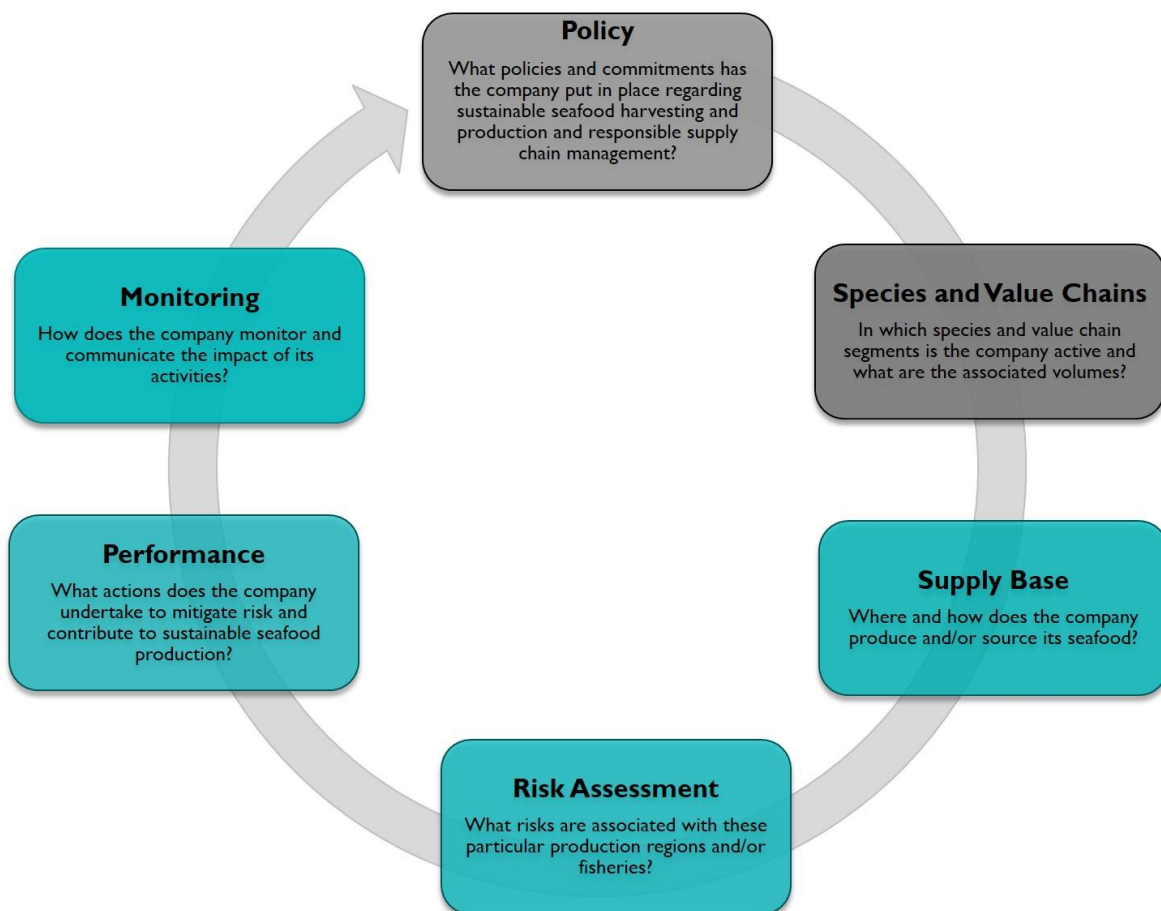
The Seafood Stewardship Index will demonstrate how the leading seafood companies perform according to societal expectations. To do this, the Index recognizes that different species have different sustainability issues and challenges. The Index will therefore not discriminate on the basis of the species in which a company is active (with the exception of species listed under the UN Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) [32]). The Index does not intend to compare the sustainability of different species, instead it aims to assess how individual seafood companies practice stewardship by continuously improving the sustainability of production and harvesting of the seafood they sell.

Two levels of comparison can be applied:

- Corporate level assessment: all companies in scope can be compared in terms of their corporate policies and governance systems with respect to sustainability as well as levels of transparency regarding their species portfolio, catch and/or production volumes, and sourcing policies and practices.
- Species level assessment: depending on their species portfolio, companies face different sustainability risks and challenges. The company/species matrix (table 1) suggests there is sufficient overlap between the portfolios of companies in scope. This allows for the comparison of the performance of individual companies to a sufficient number of peer companies that are active in the same species category.

The following framework gives a conceptual overview of how the performance of individual seafood companies can be assessed in a way that can be compared with the performance of other companies.

Figure 1: Assessment framework



Practical indicators that assess corporate policies and measure corporate performance should be established, thereby creating straightforward metrics and points of comparison. Stakeholders now often lack the right information about seafood companies or miss the context in which to place information they do have about individual seafood companies. The Seafood Stewardship Index should therefore collect, assess, and publish information that otherwise would not be disclosed or perhaps not even produced.

This process will not only better inform stakeholders but will also recognize the contribution of seafood companies to sustainable seafood production. The Index will highlight leading practices and gaps within the sustainability policies and performance of individual companies. These improvements often start small with companies pioneering innovative approaches, experimenting, and executing pilot projects. The Index will therefore give credit to *small steps* that are intended as *first steps*, as the ultimate goal is to see portfolio-wide improvements. Differences in commitments, policies, and performance are likely to exist within the same company, between its subsidiaries, and in comparison to its peers. By highlighting these differences, the Index shows both the company itself and its stakeholders where each company stands in relation to its peers and on specific issues.

INDEX PROCESS

Index Initiative intends to develop the *Seafood Stewardship Index* in the period 2017 – 2019. A general development trajectory is outlined in figure 3 below.

Figure 2: Index development trajectory



STAKEHOLDER DIALOGUE

Multi-stakeholder dialogues and roundtables are a crucial part of the Index development process as they ensure the Index and its methodology address the most pressing societal needs. This will help to create support and legitimacy for the Index. In addition, these dialogues will help to reach a common understanding among different stakeholder groups in terms of their expectations towards companies. Events can range from single stakeholder group consultations to multi-stakeholder roundtables, including a broad range of key stakeholders like multilateral organizations, investors and banks, certification bodies, NGOs, governments, academia, seafood buyers, and the industry itself.

COMPANY OUTREACH

Companies that fall within the scope of the Index can be based in various geographic locations, both in developed, emerging, and developing economies. This, in addition to their ownership structure – private, listed, or (partially) state-owned – leads to different attitudes towards their role in society, transparency, and sustainability. A robust outreach strategy will ensure the Index becomes a valuable point of orientation for companies across the globe.

METHODOLOGY DEVELOPMENT

The outcomes of the multi-stakeholder dialogues and roundtables will be the cornerstone for the Index methodology. By comparing company performance against stakeholder expectations, the Index will help to clarify the role that the industry can play and creates transparency regarding the contribution of individual companies. Thereby, the Index can contribute to an informed dialogue about how companies can step up their efforts. Companies are assessed and ranked using a weighted analytical framework that includes different measurement areas. The methodology development process is supervised by an *Expert Review Committee*, consisting of independent experts who provide external advice on the structure, scope, methodology, and analysis. The Index will build on and use existing frameworks, standards, and data sources. These are likely to include the OECD Guidelines for Multinational Enterprises, FAO Code of Conduct for Responsible Fisheries, Monterey Bay Aquarium’s Seafood Watch, SFP’s FishSource, Seafish’s Risk Assessment for Sourcing Seafood (RASS), and fishery and species specific standards that have been set by third-party certification bodies such as MSC, BAP, and ASC. The draft methodology will be subject to open consultations and is reviewed by the Expert Review Committee.

DATA COLLECTION

After the methodology is finalized and published, the data collection process starts. Information is collected from public sources and companies are asked to submit data. Both these types of data will be used to score companies on the indicators as outlined in the methodology. Data submission is voluntary but companies that participate are likely to see this reflected in their score as publicly available data is often incomplete. Third-party sources (if available and credible) will also be used to cross-check and verify data submitted by companies.

INDEX PUBLICATION AND DISSEMINATION

The Index is published every two years as companies require time to implement meaningful, measurable changes. Furthermore, maintaining this cycle ensures a manageable administrative and cost burden for both companies and Index Initiative. After the publication, Index Initiative will actively work to disseminate the findings and knowledge provided by the Index. This includes media outreach, engagement with individual companies, industry organizations, and outreach to specific stakeholders such as investors, NGOs, and policymakers. This dialogue also provides input for the methodology review process for the next Index.

INDEX GOVERNANCE

Although initiated under the umbrella of Index Initiative, the Seafood Stewardship Index will evolve into an independent foundation. This foundation will be funded by governments and philanthropic foundations. To ensure its independence, the Index will not accept any financial or other contributions from the industry or related sectors. This foundation will be supervised by a Supervisory Board, consisting of members reflecting the multi-stakeholder character of the Index. The Supervisory Board is responsible for the foundation's strategy, policies, and operations. Members of the Supervisory Board have no material conflicts of interest to ensure independent and impartial governance.

The Expert Review Committee oversees the development of the Index methodology. This includes the Index scope, indicators, weighting, and overall analytical framework. In addition, it provides advice on the structure and analytical approach of the Index. The Expert Review Committee is made up of leading independent international experts that reflect the range of industry stakeholders and are active in some capacity on the Index agenda.

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