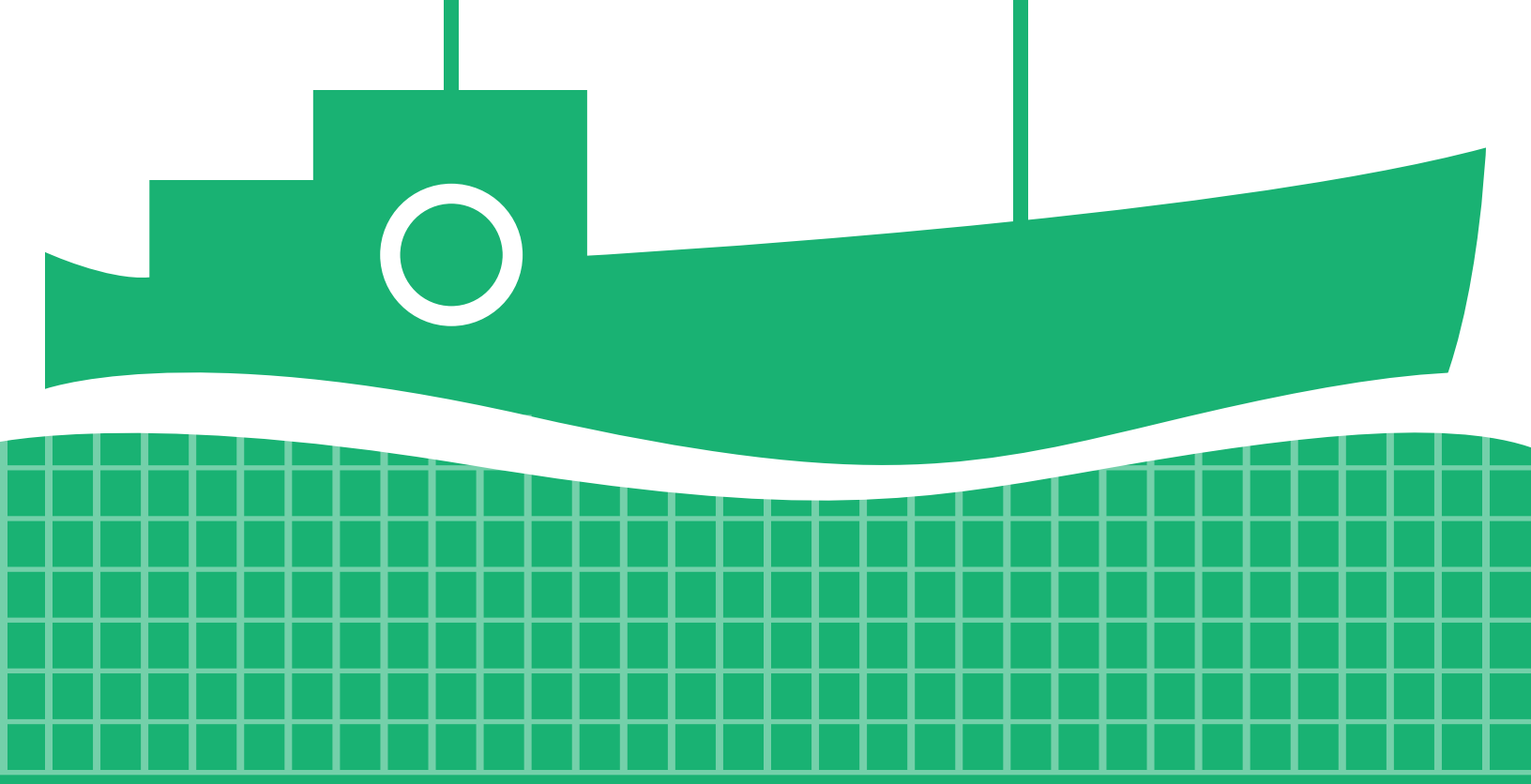

# Fishery Improvement Projects:
## How Retailers and the Supply Chain Advance Seafood Sustainability

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# Fishery Improvement Projects:
## How Retailers and the Supply Chain Advance Seafood Sustainability

Written by:
Nadine S. Bartholomew, Consultant

Written for:
Food Marketing Institute (FMI)

Disclaimer: This publication is for retailers who believe there is need for sustainable seafood products in their stores and want tools and resources to help them discern which products are in fact more sustainable. One note of caution: this publication DOES NOT recommend that buyers and category managers source more sustainable products. That decision should be based on the individual retailer's sustainability priorities and procurement strategies. We have tried to offer balanced information, not favoring one approach to seafood sustainability over another. The inclusion of company or organization examples in this publication is intended strictly for learning purposes and does not constitute an endorsement of the individuals, organizations or companies. Further, when a company program or organization is highlighted, we are not promoting their products or services but rather providing an example of the process they use to increase or improve sustainability in the value chain.

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**Food Marketing Institute (FMI)** conducts programs in public affairs, food safety, research, education and industry relations on behalf of its 1,500 member companies — food retailers and wholesalers — in the United States and around the world. FMI's U.S. members operate approximately 26,000 retail food stores and 14,000 pharmacies. Their combined annual sales volume of $680 billion represents three-quarters of all retail food store sales in the United States. FMI's retail membership is composed of large multi-store chains, regional firms and independent supermarkets. Its international membership includes 200 companies from more than 50 countries. FMI's associate members include the supplier partners of its retail and wholesale members.
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# OVERVIEW

According to the Food and Agriculture Organization of the United Nations (FAO), capture fisheries and aquaculture (fish farming) supplied the world with about 140 million tonnes of fish for human consumption in 2013; to the tune of US$132.2 billion. The U.S. imports 91 percent of its seafood, half of which is from aquaculture.

Top seafood importing countries include:

- Australia
- Canada
- China
- France
- Germany
- Italy
- South Korea
- United Kingdom (the)
- United States (the)

Top seafood producing countries include:

- Chile
- China
- India
- Indonesia
- Japan
- Peru
- Philippines (the)
- Russian Federation (the)
- Thailand

In 2012, the top five seafood species consumed by North Americans included:

**Shrimp** (3.8 pounds per capita)
**Canned Tuna** (2.4 pounds per capita)
**Salmon** (2.02 pounds per capita)
**Tilapia** (1.48 pounds per capita)
**Pollock** (1.17 pounds per capita)



Source: National Fisheries Institute (NFI) website

The FAO fact sheet entitled *Trends in Capture Fisheries Development* states that some 73 percent of the 392 global seafood stock items or species the FAO routinely track are in need of improved management if they are to avoid becoming overfished or, in the case of those already overfished, if they are to be rebuilt (See Appendix A for more information about the status of wild-caught fisheries). Many believe that the future growth of the seafood sector will come from aquaculture, but as aquaculture production intensifies so do environmental and social concerns about poor management practices (See Appendix B for more information about Aquaculture Improvement Projects).

The term Fishery Improvement Project (FIP) was made popular by non-governmental organizations (NGOs), namely the Sustainable Fisheries Partnership (SFP) and the World Wildlife Fund (WWF). Today, many of these projects are led either by SFP or WWF. Project participants vary depending on the nature of the fishery and the scope of the improvements needed, and may include stakeholders such as fishermen, fish farmers, NGOs, fishery managers, local governments, and other members of the seafood supply chain. Engaging all those who have a vested interest in healthy fisheries and fish-farming regions helps to ensure the development of actionable, pragmatic, and systematic solutions.

Reforming unsustainable fisheries and fish farms is vital to global "seafood" security, but requires strong engagement of all stakeholders involved in the value chain; thus the need for FIPs.

## PURPOSE OF DOCUMENT

This publication is designed to share insights on how retailers and seafood suppliers can engage in meaningful activities with other stakeholders in the seafood supply chain to influence adoption of sustainable fishery and aquaculture practices. Case studies are used to explore the experiences of leading seafood industry companies and to demonstrate the value of engaging in FIPs. The primary goals of the document are:

- To highlight how and why retailers get involved in FIPs
- To explore how key issues and concerns differ across fisheries
- To emphasize the need to understand, respect, and address different stakeholder perspectives
- To profile examples of successful FIPs

# WHAT IS A FISHERY IMPROVEMENT PROJECT (FIP)?

A Fishery Improvement Project (FIP) involves the collaborative efforts of various supply chain stakeholders to improve the sustainability of a fishery by helping to rebuild the stock level of the target species. While most FIPs have a global outlook, in the U.S. they can be used to fulfill the purposes of the Magnuson–Stevens Fishery Conservation and Management Act (MFCMA) across the seafood industry by:

- Acting to conserve fishery resources
- Supporting enforcement of international fishing agreements
- Promoting fishing in line with conservation principles
- Providing for the implementation of fishery management plans (FMPs) which achieve optimal yield
- Establishing Regional Fishery Management Councils to steward fishery resources
- Developing underutilized fisheries
- Protecting essential fish habitats
- Reducing bycatch and establishing fishery information monitoring systems

Source: NOAA Website

# WHY PARTICIPATE IN A FIP?

Fishery Improvement Projects (FIPs) protect seafood species and habitats. They also provide retailers with new and unique ways to:

- Engage local communities by increasing awareness of critical seafood issues among customers – giving them the opportunity to use their purchases to support a healthier, more sustainable food system
- Build collaborative relationships with key supply chain stakeholders by engaging and empowering forward-thinking fishermen and seafood suppliers
- Support environmentally sustainable and socially responsible business practices in emerging countries
- Mitigate resource risks in the seafood supply chain by utilizing innovative management models to ensure the continuity of the global seafood supply

# MANAGING A FIP

Each FIP is unique, which allows for creativity and innovation. The Sustainable Fisheries Partnership (SFP) developed the "FIP Improvement Tracker" outlined below, which offers some good general guidelines to track progress.

**➤ Stage 1**

FIP is launched: The fishery has been evaluated, improvement options identified, and supply chain engaged, with this information publicly available.

**➤ Stage 2**

FIP is formed: The stakeholders have met, formed either a formal partnership or informal alliance, and developed a work plan for improvements on which they all agree.

**➤ Stage 3**

Encouraging improvements: The work plan is made public. FIP members are educating interested parties in the public and private sphere about necessary improvements, and adopting better product specifications and procurement policies.

**➤ Stage 4**

Delivering improvements in policies and/or fishing practices: There have been improvements in government policy or fishery management, better compliance with the existing management plan, or improvements in fishing practices.

**➤ Stage 5**

Delivering improvements in the water: There have been positive trends in key scientific indicators (biomass, fishing mortality, bycatch, and unacceptable habitat impacts).

**➤ Stage 6**

Fishery is MSC certified (OPTIONAL): Achieving MSC certification is desirable but not absolutely a requirement for a FIP. There are, of course, definite benefits of MSC certification, such as having an independent third party verify the results of a FIP.

Source: SFP Website

Most but not all FIPs are initiated to help a fishery gain certification from the Marine Stewardship Council (MSC). To achieve MSC certification, fisheries are evaluated against the following three principles:

- **Principle 1:** A fishery must be conducted in a manner that does not lead to overfishing or depletion of the exploited populations and, for those populations that are depleted; the fishery must be conducted in a manner that demonstrably leads to their recovery.
- **Principle 2:** Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.
- **Principle 3:** The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.



Source: MSC website

# LESSONS FROM THE FIELD

Retailers can lend their support to FIPs in a variety of ways including purchasing products from the designated fisheries, participating in project meetings to review and encourage ongoing progress, and/or providing financial support to the FIP's activities. The following case studies demonstrate the creative and successful approaches of four major retailers and their seafood suppliers by focusing on four key milestones of Fishery Improvement Projects:

- **Data collection** – Understand the issues
- **Stakeholder engagement** – Motivate the players
- **Goal development** – Facilitate the desired outcome(s)
- **Project implementation** – Demonstrate progress

## Publix Super Markets and Save On Seafood Company Improve Data Collection in the Gulf of Mexico Reef Fish Fishery Improvement Project

**Participating in a Fishery Improvement Project (FIP) offers retailers a unique way to support their local communities. These projects can play a vital role in increasing awareness of critical seafood issues among customers – giving them the opportunity to use their purchases to support a healthier, more sustainable food system. FIPs also provide increasingly rare opportunities to build customer trust through transparency about where the retailer's seafood came from and how, and by whom, it was caught. The following case highlights how Publix Super Markets and Save On Seafood Company worked to improve discard monitoring and observer coverage for the commercial fleet in the Gulf of Mexico Reef Fish Complex.**

The Gulf of Mexico is an ocean basin, the U.S. portion of which is located between the states of Florida, Alabama, Mississippi, Louisiana, and Texas. Fishing is an important commercial and recreational activity in this region, and some of the major species caught in these waters include red snapper, amberjack, tilefish, swordfish, and various grouper, as well as shrimp and crabs. Red snapper (*Lutjanus campechanus*), red grouper (*Epinephelus morio*), and gag grouper (*Mycteroperca microlepis*) are most popular among local fishermen and consumers in the Gulf of Mexico. Unfortunately, this popularity has fueled decades of heavy fishing pressure leading to the overfishing of the reef fish stock complex.

When the fishery was officially declared overfished, the Gulf of Mexico Fishery Management Council and NOAA Fisheries implemented various Individual Fishing Quota programs (IFQs) for red snapper, red grouper, and gag grouper aimed at reducing overfishing and improving the sustainability of these fisheries. These IFQs limited the number of commercial fishermen that were allowed to participate in the fishery, and also set annual catch limits to manage harvest at levels that would allow the overfished stock to rebuild to target population levels by a specified deadline. Since the implementation of these programs, significant improvements have been made, and as projected, the target stocks have been rebuilding.

In light of the measurable increases in biomass, the Gulf of Mexico Reef Fish Shareholders Alliance (RFSA) put their fisheries up for Marine Stewardship Council (MSC) pre-assessment in hopes of gaining MSC certification. The results of the MSC pre-assessment showed that whilst the snapper and grouper fisheries were responding positively to the improved management plans, there was still a need for better discard monitoring and observer coverage throughout the commercial fleet. The pre-assessment also found a lack of accountability and data collection by recreational fishermen, who can account for up to 50 percent of catches. Consequently, the RFSA set up a Fisheries Improvement Project (FIP) in 2010, working in collaboration with various supply chain stakeholders to address these concerns.

In 2010, Publix Super Markets, Inc. (Publix) committed to participating in, and funding the activities of, the Gulf of Mexico Reef Fish Fishery Improvement Project (FIP) for grouper and snapper. Publix is the largest employee-owned supermarket chain in the United States with employees owning about 30 percent of the company. Based in Lakeland, Florida, more than two-thirds of its 1,085 stores are located in Florida, but the chain also operates in Georgia, North Carolina, South Carolina, Tennessee, and Alabama. "The Gulf of Mexico is our backyard," said Guy Pizzuti, Category Manager of Seafood for Publix. "With our long established commitment to sourcing product from these fisheries, participation in the Gulf of Mexico Reef Fish FIP was an easy decision. We look forward to continuing our efforts to improve data collection within this fishery. The work being done by this FIP, will improve the data used that will ultimately lead to more accurate stock assessments. Having access to accurate data is vital to the success of these projects, but unfortunately, over 30 percent of seafood we buy comes from data poor fisheries. Projects like the Gulf of Mexico Reef Fish FIP are very valuable to our industry and can be an example of how regulators, fisherman, seafood companies, and end users can work together to improve data collection within fisheries."

The FIP model aligns well with Publix's corporate culture, which thrives on open communication and continuous improvement. The company's well established Quality Improvement Process (QIP) program was created to encourage everyone at Publix to work collectively to improve efficiencies, reduce costs, and to create openness to change. "Our open door policy was established by our founder, George W. Jenkins. Mr. George always focused on associates," recalls Pizzuti. "He believed everyone had a valuable perspective to contribute to the success of the business, so the open communication of pertinent and credible information forms the building blocks of Publix innovative culture. Mr. George trusted our associates to provide the necessary insights [positive or negative] that would help develop strategies to move the company forward."

Likewise, the importance of having credible fishery data cannot be overemphasized, because it is only with this information that a fishery can be accurately evaluated and the appropriate improvement options identified. Unfortunately, the historic distrust that exists between fishermen (commercial and recreational), government regulators, fishery managers, seafood buyers, and non-governmental organizations (NGOs) can make productive communication between these stakeholders difficult. "Too often commercial fishermen get a bad rap, but in my experience the majority of them comply with fishing regulations and really care about the fisheries," said Pizzuti. "However, fishermen and the industry stakeholders of these smaller fisheries cannot be expected to finance these changes. This is why Publix and Darden Restaurants have helped to finance this FIP to the tune of $350,000 to-date."

Electronic monitoring has been one of the primary data collection and verification activities of the Gulf of Mexico Reef Fish FIP. During the first two years of the FIP, camera-based electronic monitoring systems (EMS) were installed on seven commercial vessels. Collected footage was reviewed to identify and count the number of fish retained and discarded by commercial fishing boats.

In 2012, SaveOn Seafood Company (SaveOn) signed on to support the FIP by encouraging more captains to have their boats monitored by EMS observers. Thus far, three additional boat captains have agreed to participate in the EMS program. “No one likes to be scrutinized and there is always a lingering concern that the information collected will be used against the fishermen. But when the captains learned that Publix and Darden were both involved in this FIP, they jumped at the chance to participate,” said Gib Migliano, the Owner of SaveOn Seafood Company. “Fishermen [commercial and recreational] may not articulate their concern for the future of fisheries like an NGO, or come to the same environmental conclusions as scientists, but their participation is essential to the collection of fishery data.”

Based in St. Petersburg, Florida, SaveOn Seafood Company is a first hand receiver and processor of fresh fish. The privately held company provides portion-packed, fresh fish fillets to restaurant chains, foodservice providers, and grocery stores nationwide. Originally a commercial stone crabber, Migliano purchased the company from one of his best customers about 30 years ago. Since then, Migliano has grown the business by leaps and bounds. Today, SaveOn has 110 employees, annual revenues of between $50 million and $80 million, and ships over 100,000 pounds of fresh, portioned fish to customers each week. “I have been very lucky throughout my career both as a commercial fisherman and as a processer,” said Migliano. “But I define luck as the intersection of preparation, opportunity, and courage. SaveOn is customer driven and over the years we have been able to identify and capitalize on new trends in the seafood sector. For example, we got our first big break as a processor in 1984, when Red Lobster put fresh fish on their menu. Spotting this opportunity we invested in new equipment and word got around about our new processing capabilities. Likewise, I believe FIPs offer a great opportunity for all seafood industry stakeholders to meet their sustainability goals. If we, the stakeholders, invest today, we will have more than enough fish for tomorrow. ”

## Wegmans Food Markets and JJ McDonnell & Company, Inc. Build Stakeholder Trust through the North Carolina Fresh Shrimp Fishery Improvement Project

**Participating in a Fishery Improvement Project (FIP) offers retailers a unique way to identify and build relationships with the best fishermen and most innovative seafood suppliers. Good and reliable suppliers can be essential to a seafood department’s profitability and growth. When a retailer takes an ownership stake in the stewardship of a fishery it demonstrates a very real and public commitment to seafood sustainability and often inspires supply chain involvement. The following case highlights how Wegmans Food Markets and JJ McDonnell & Company worked to increase fishermen’s compliance with fisheries management regulations in an artisanal shrimp fishery in North Carolina.**

The commercial fishing industry in the U.S. state of North Carolina (NC) began in the early 18th century and is part of the very fabric of North Carolina’s coastal heritage. The waters off this southeastern state are home to a diverse bounty of marine life. Some of the major seafood species caught in these waters include: blue crabs, shrimp, Atlantic croaker, spiny dogfish, summer flounder, striped mullet, bluefish, and swordfish. According to the NC Division of Marine Fisheries, shrimp landings totaled 6.1 million pounds in 2012 at a market value of US$13,294,060.

Widely considered a healthy fishery, the North Carolina shrimp stock (which includes white, pink, and brown species) is highly fecund and resilient to fishing pressure. Shrimp trawling typically takes place over the region's muddy and sandy ocean bottom habitats, so fishing gear does not impact the fishery as significantly as they do other types of benthic habitats. Unfortunately, a recent study by the NC Division of Marine Fisheries showed that local fishermen's compliance with Turtle Excluder Device (TED) regulations, and monitoring of discarded bycatch was low.

The National Marine Fisheries Service (NMFS) requires states to be in compliance with the Endangered Species Act of 1973 and Marine Mammal Protection Act of 1972. A number of animals protected under the Endangered Species Act are found in North Carolina, but sea turtles are the only protected species that interact with NC shrimp trawls. To minimize these interactions Turtle Excluder Devices (TEDs) are required in both state and federal waters. The reported incidence of poor compliance with these regulations can have negative environmental and socio-economic consequences for the fishery.

To ensure long-term viability of the NC shrimp fishery, the Atlantic States Marine Fisheries Commission voted to begin the process of amending the Shrimp Fishery Management Plan with a focus on bycatch and associated issues; noting that support from shrimp fishermen, suppliers, and retailers would be essential for achieving the necessary compliance. According to Carl Salamone, Vice President of Seafood Sustainability for Wegmans Food Markets, Inc., "This is where we came in."

Wegmans Food Markets, Inc. (Wegmans) is an 83-store supermarket chain with stores in New York, Pennsylvania, New Jersey, Virginia, Maryland, and Massachusetts. Founded by John and Walter Wegman in 1916, today the chain is still owned and run by the Wegman family, making it one of the largest private companies in the United States. "We started to carry Fresh NC shrimp in our Virginia and Maryland stores in 2010," recalls Salamone. "It was a seasonal product, only available for 12 weeks, but our customers loved it and demand grew year over year. So, when concerns over bycatch of endangered species came to light in 2012, we decided to lend our support to the development of a Fishery Improvement Project (FIP) to address these and other issues."

As a first course of action, Wegmans partnered with their NC shrimp supplier JJ McDonnell & Company, Inc., (JJ McDonnell) to purchase the pertinent fishery data from the NC Division of Marine Fisheries. JJ McDonnell is a wholesale seafood distributor based in Jessup, Maryland. The privately-owned company has 100 employees, 25 trucks, and generated revenues of approximately US$50 million in 2013. Armed with over a decade's worth of fisheries information, the retailer and their supplier then began to identify and engage other key stakeholders (i.e., those who are actively involved in the project, or whose interests might be positively or negatively affected by execution or completion of the project).

"Wegmans is one of our best customers, so when Carl approached us with his list of sustainability priorities for seafood, which included his concerns about the North Carolina shrimp fishery, we were happy to help," said Kurt Friesland, Director of Sales and Purchasing for JJ McDonnell. "Carl and I

attended some tough meetings with the local NC stakeholders where we left thinking, what have we gotten ourselves into, but through that process we built trust and even identified a few champions who will help us move the FIP forward faster. We are in this with you, was the early battle cry of our FIP."

Fishery Improvement Projects (FIPs) are complex and impact an array of stakeholders. If key stakeholders are overlooked or misunderstood in the project design, or if their interests are poorly engaged or excluded during project planning and implementation, it can often result in unexpected and undesirable outcomes. "You can't run a FIP from your desk, you really have to be on the water to understand the dynamic of the fishery," Salamone commented. "Wegmans and JJ McDonnell are very hands-on companies. We have been buying shrimp from North Carolina for several years and many of our buyers have developed friendships with the local fishermen. We have long standing relationships with many of the key stakeholders in the fishery and felt confident that we could all work together to initiate change."

Conflicts often emerge when stakeholders have different motives or agendas, but do not try to understand each other's hopes and expectations. "North Carolina fishermen were more familiar with the adversarial activities of the marine conservation movement, so the FIP model of collaboration in pursuit of conservation was met with skepticism," lamented Salamone. "The shrimp fishermen seem to believe that any bycatch data they collected would be used to close down their fishery. Some stakeholders even declined the opportunity to participate. Our FIP is an ongoing process of creating a shared vision, building trust, and learning to communicate. It has been tough for us to build trust and get stakeholders involved, but we count the recent development and distribution of the participation agreement and accompanying memorandum of understanding as a victory."

## Loblaw Companies Limited and Blueyou Consulting LTD Meet Sustainability Goals for Shrimp through an Aquaculture Improvement Project

**Similar to FIPs, which focus on wild-caught fisheries, Aquaculture Improvement Projects (AIPs) focus on improving the sustainability of farmed seafood products. They offer retailers a unique way to support better business practices in emerging industries. These projects often stimulate the transfer and adoption of new technology and ideas that can help to improve the quality, safety, and sustainability of seafood products while providing fish-farmers with increased access to markets through new opportunities to expand and increase international sales. The following case highlights how Loblaw Companies Limited and Blueyou Consulting LTD worked to bring environmentally preferred farmed shrimp from Thailand to North American consumers. See Appendix B for more information on AIPs.**

Shrimp is the top selling seafood product in North America. Consumers eat more than 4 pounds of shrimp per person per year, and a regional supermarket chain with over 300 stores is likely to sell over 3 million pounds of shrimp per year. Reportedly, over 90 percent of the shrimp eaten in North America is farmed overseas – imported from countries like Thailand, Indonesia, India, and Ecuador. Most farmed shrimp are from two species of the family Penaeidae – *Litopenaeus vannamei* (Pacific white shrimp) and *Penaeus monodon* (giant tiger prawn).

The demand for shrimp has fueled rapid development and expansion of intensive aquaculture practices globally. Many believe that the future growth of the seafood sector will come from aquaculture, but as aquaculture production intensifies so do environmental and social concerns about poor management practices. For example, major environmental impacts of large-scale shrimp culture have been associated with the inappropriate use of antibiotics and chemicals; the physical degradation of coastal habitats, through conversion of mangrove forests and destruction of wetlands; the use of fishmeal for feed, which can deplete wild stocks if they are used in formulated feeds for shrimp production; and water pollution, where waste from aquaculture operations is released into the surrounding marine or freshwater environment, potentially leading to hypoxia, eutrophication, or salinization.

With more than 1,000 corporate and franchised stores, Loblaw Companies Limited (Loblaws) is one of the largest food retailers in Canada. As such, Loblaws is the country's largest purchaser of seafood and by extension one of the country's largest buyers of shrimp. In 2009, this major grocery retailer made a commitment to source all the wild and farmed seafood sold in its stores from sustainable sources by the end of 2013. Loblaws' sustainable seafood commitment was a huge undertaking. In pursuit of these very ambitious goals, the company is working closely with key stakeholders such as the World Wildlife Fund - Canada (WWF-Canada) and the Marine Stewardship Council (MSC) to develop a work plan for the implementation of this commitment.

Engaging stakeholders in goal setting and work plan development is another important step in the FIP/AIP process. Goal setting is a powerful way of motivating people. For many, challenging goals can be more motivating than easy goals, because they are identified as much more of a worthwhile accomplishment to achieve. Loblaws believed that drawing a line in the sand with a specific and aggressive goal would lead to results. "We used a very structured, transparent approach to our goal setting," said Melanie Agopian, Senior Director of Sustainability for Loblaws. "And, we worked collaboratively with stakeholders like WWF, MSC, vendors, fishers, and fish farmers to develop and implement a customized methodology for the assessment of all the seafood we sell in our stores."

Once their goals were in place, Loblaws set about meeting them. Early activities included removing four seafood species from fresh seafood counters and replacing them with "We've gone fishing" signs in empty trays – which indicated that Loblaws was actively working with key conservation organizations and vendors to fill those trays with seafood products from sustainable sources.

"As it relates to shrimp, although we do carry MSC certified wild Atlantic Cold Water shrimp, much of the shrimp we sell is harvested through aquaculture or shrimp farming," said Agopian. "So, identifying sustainable sources of these items was a priority for our team. To help the industry develop better shrimp sustainability standards, we encouraged all of our vendors to participate in the Shrimp Aquaculture Dialogues (facilitated by WWF). The Shrimp Aquaculture Dialogues informed the Aquaculture Stewardship Council (ASC) shrimp certification, which are today being established. However, one of the ways that we drive change in the interim is by partnering with stakeholders in Fisheries or Aquaculture Improvement Projects, and that's how we learned about Blueyou Consulting and their Cycle Shrimp product."

Based in Zürich, Switzerland, Blueyou Consulting LTD (Blueyou) is an international consulting company that focuses on sustainable fisheries and aquaculture and the related supply- and value-chains. Their Cycle Shrimp program identifies environmentally preferable sources of farmed white shrimp (*Penaeus vannamei*) from Thailand. Blueyou designed the Cycle Shrimp program specifically for the North American market to provide a verified and traceable source of "Good Alternative" shrimp.

The criteria of the Cycle Shrimp program addresses several of the environmental impacts associated with shrimp farming – these shrimp are farmed in closed recirculation systems where water is maintained, treated and reused for at least two production cycles, and after that period, only 50 percent of the pond water may be exchanged in a single event prior to the next two production cycles; water released from ponds upon harvesting must be retained within the internal system (sedimentation pools and/or reservoirs); pond sludge must be disposed in dedicated areas on the farm or in appropriate areas outside the farm (e.g. agricultural fields); no antibiotics can be used; cutting of mangroves for farm construction and operation is prohibited; and the fishmeal and fish oil ratios are less than 2.0 respectively.

According to Corey Peet, Market Outreach and Programme Manager for Blueyou, "Cycle Shrimp can best be described as an Aquaculture Improvement Project and serves as a great entry point towards meeting the standards of the Aquaculture Stewardship Council (ASC). We work in-country to identify and engage the best farms that have the capacity to meet the Cycle Shrimp criteria, we help fund the necessary improvements, and encourage their progress towards ASC certification. Loblaws' seafood buyers were so impressed with this product and its price point that we immediately shipped them a 40 foot container with about 30,000 pounds of Cycle Shrimp. It is likely that Loblaws would have continued to buy all the Cycle Shrimp that we could deliver, but the EMS [Early Mortality Syndrome] that decimated the Thai shrimp industry restricted our access to the product."

Blueyou has also been working with shrimp farmers in Ecuador who are about to get their ASC certification. "Loblaws buyers may soon turn to Ecuador for sustainable farmed shrimp," said Peet. "These farms would be a great source of third-party certified sustainable shrimp for the North American market."

## Safeway Inc. and Norpac Fisheries Export LLC Drive Progress in the Republic of Marshall Islands Bigeye Tuna Longline Fishery Improvement Project

**Participating in a Fishery Improvement Project (FIP) offers retailers a unique way to mitigate resource risks in their seafood supply chain. Retailers have a vested interest in ensuring that the supply of seafood remains available and affordable while meeting customers' ever increasing expectations for quality and safety. By engaging multiple-stakeholders, FIPs can provide a coordinated, holistic, market-based approach to reducing the vulnerability of at-risk fisheries and to ensuring the continuity of the global seafood supply. The following case highlights how Safeway Inc. and Norpac Fisheries Export LLC worked to support improvements in domestic and regional fishery management policies for the commercial tuna fleet in the Marshall Islands.**

The Republic of Marshall Islands (Marshall Islands or RMI) is a low-lying Pacific island country, just north of the equator, consisting of approximately 70 square miles of land spread out over 750,000 square miles of ocean. This country is part of the subregion of Oceania called Micronesia. The United States is one of the Marshall Islands' top trading partners, and under the multilateral U.S.-Pacific Islands tuna fisheries treaty, the U.S. provides an annual grant to Pacific island parties, including the Marshall Islands, for access by licensed U.S. fishing vessels. The RMI generates the majority of its fisheries income from foreign fleet licensing, so the country also sells fishing rights to other nations as a source of income.

The Marshall Islands Marine Resources Authority (MIMRA) is responsible for the management and development of the tuna fishery in this region. In addition to national management measures, the Marshall Island fishery is party to a number of regional and international management arrangements including the Parties to the Nauru Agreement (PNA), the United Nations Fish Stocks Agreement (UNFSA), and the Western and Central Pacific Fisheries Commission (WCPFC).

Longline fisheries in the Marshall Islands have historically targeted both yellowfin tuna (*Thunnus albacares*) and bigeye tuna (*Thunnus obesus*), with bigeye tuna being the dominant species caught by the fleet. According to MIMRA, in 2012 there were a total of four RMI-flagged longline fishing vessels operating exclusively inside the RMI Exclusive Economic Zone (EEZ). Total catch by this national longline fleet was reported at 523 tonnes (up from 409 tonnes in 2011). Additionally, eight foreign nations were licensed to fish in RMI waters, making up a total of 76 longline vessels. The majority of these vessels are Chinese-flagged but they also included vessels from Japan, Taiwan, and the Federated States of Micronesia. The overall catch for the foreign-flagged longline fleets in 2012 was estimated at 6,390 tonnes (up from 5,081 tonnes in 2011).

North Americans eat approximately 2.5 pounds of canned tuna (primarily albacore, *Thunnus alalunga* or skipjack, *Katsuwonus pelamis*) per person, per year, making it the second most popular seafood item. Bigeye and yellowfin tunas can be sold fresh, frozen, or canned, but the higher value, longline-caught tunas are often used for sashimi. Both bigeye and yellowfin are known as ahi by North American consumers, but when used for sushi or sashimi, bigeye is commonly sold as maguro.

Norpac Fisheries Export LLC (Norpac) is a seafood processor and distributor formed as a joint venture between US-based T.J. Kraft, Ltd., and RMI-based Luen Thai Fishing Venture. In 2010, Norpac funded a MSC pre-assessment for the Marshall Islands Central and Western Pacific yellowfin (*Thunnus albacares*) and bigeye (*Thunnus obesus*) longline fishery. One of the main results of the pre-assessment showed that yellowfin tuna was not overexploited (i.e., the fishing mortality rate and stock biomass were healthy). However, results indicated that the stock of bigeye tuna taken in these fisheries was overexploited (i.e., the fishing mortality rate was too high, causing overfishing, and biomass was approaching an overfished state). The MSC pre-assessment also suggested that the existing regional management measures would not be adequate to correct the situation, and current levels of surveillance and enforcement were not resulting in the necessary compliance with domestic and regional fishery management policies.

According to Thomas Kraft, Managing Director for Norpac, "bigeye and yellowfin tunas account for 65 percent of Norpac's product offering, and 90 percent of that product comes from the RMI. The results of the MSC pre-assessment were a huge eye opener for us that put laser like focus on the correlation between the sustainability of our business and the sustainability of the tuna stocks. So, we decided to develop a program that would help to improve the sustainability of the fishery while motivating other stakeholders to get involved."

In 2011, Norpac asked the Sustainable Fisheries Partnership (SFP) to develop and launch a Fishery Improvement Project for the Marshall Islands and Federated States of Micronesia. Today, Norpac is leading this FIP. They have assumed responsibility for accomplishing the tasks set out in their workplan and are managing their own progress towards compliance with MSC certification principals and criteria.

Norpac's workplan is essentially a list of time-bound activities aimed at helping the fishery to address the deficiencies identified in the MSC pre-assessment. The workplan also outlines the roles and responsibilities assigned to, and accepted by, each stakeholder. It is a living document, designed to be updated as key milestones are met or as fishery information evolves. For Norpac, the RMI FIP has been an exercise in project management and in transparency; they have worked to develop key performance indicators making their performance against said metrics available to the public.

"Initially, we provided the funding and SFP provided the technical expertise needed to identify stakeholders and to develop the workplan," recalled Kraft. "After about two years, I felt confident that we could take the lead on managing the FIP ourselves. We still collaborate with SFP, but I am happy to say that ours is an industry led FIP that truly draws upon market forces, namely the commitment of retailers like Safeway, to drive fishery improvements.

Based in Pleasanton, California, Safeway, Inc. (Safeway) is a Fortune 100 company and one of the largest food and drug retailers in North America based on annual sales of $37.5 billion in 2012. At the end of the third quarter 2013, the company operated 1,406 stores in the United States and had approximately 140,000 employees. "I often say that Safeway is a national company with hometown appeal," said Michael Loftus, Director of Procurement for Safeway. "We can do this because we use

our point-of-sale data to understand what our customers really want and to actively deliver better deals, better products, and a better overall shopping experience. This focus on the data is driving growth in our natural, organic, and sustainable brands. I believe this same attention to detail can drive sustainable improvement in at-risk fisheries."

In 2010, Safeway committed to the goal of making all of their fresh and frozen seafood sustainable and traceable, with a credible, time-bound improvement process to reach that goal by the end of 2015. After establishing that ambitious goal, the company focused on implementation. Due to the complexity surrounding key seafood issues, the retailer decided to seek an outside resource to design a program tailored to their needs, and has been working with FishWise, a nonprofit based in Santa Cruz, CA, to implement their sustainable seafood policy. "Fisheries are dynamic and just as consumers are becoming more aware of the environmental and social impacts of the seafood industry, retailers must become more involved in creating solutions. Our work with FishWise helps to keep our seafood procurement policies both aligned with the ever evolving needs of our customers, and reflective of changing fishery management practices," said Loftus.

FishWise helps Safeway scope out sustainable or environmentally-preferred product sources and recommended that Safeway buy its tuna from the RMI FIP. The NGO is a well-connected stakeholder in the broader marine conservation community. They have the technical expertise needed to verify that a FIP is meeting its key performance indicators and delivering real improvements in the water.

"At Safeway we've committed ourselves for the long haul. Any retailer who wants to get involved in a FIP needs to understand that it is a long-term proposition often defined by incremental changes," said Loftus. "Fisheries do not become depleted overnight, so these issues won't be resolved overnight. We are working with FishWise to improve market access for fisheries like the RMI FIP that are demonstrating positive trends in biomass and compliance with fishery management."

# TIPS FROM THE TRENCHES

Most retailers get involved in Fishery or Aquaculture Improvement Projects at the request of their NGO partners or advisors. They often lend their support to these projects in one or more of the following ways: purchasing products from the designated fisheries/farms, participating in project meetings to review and encourage ongoing progress, and/or providing financial support to the project's activities. However, for those who do not work with an NGO or those who want to initiate a FIP and/or AIP on their own, here are three things to consider when getting started:

- The importance of the seafood species to the company (as determined by the store sales or customer demand for the product)
- Your level of influence in the fishery and the associated supply chain (as determined by the volume of product you source or your relationship with suppliers and other key stakeholders in the fishery)
- The urgency or need for improvement (as determined by the environmental, social, and economical status of the fishery/fish farm and your ability to have a positive impact)

According to Carl Salamone, Vice President of Seafood Sustainability for Wegmans and Guy Pizzuti, Category Manager of Seafood for Publix, who both serve as the retail leaders of FMI's Sustainable Seafood Committee (SSC), once the decision to participate has been made, for retailers the four key steps of Fishery and/or Aquaculture Improvement Projects (FIPs/AIPs) include:

- **Step 1 -** Data collection where retailers work to identify fisheries and/or farms in the greatest need of improvement and those most important to their companies. Selection criteria could include local species of interest and/or high volume species critical to the overall success of the seafood department.

- **Step 2 -** Stakeholder engagement where retailers identify and partner with the individuals and groups impacted by the fishery and/or farm. Often retailers can significantly increase trust and collaboration between governments, environmental organizations, and suppliers.

- **Step 3 -** Goal development where retailers agreed to and help develop a work plan that outlines project activities, timelines, goals, budgets, et cetera. Milestones need to be set and adhered to, and progress needs to be monitored. However, retailers should not allow themselves to be pressured into unrealistic goals and timelines because fisheries do not get in trouble overnight and environmental issues cannot be resolved overnight.

- **Step 4 -** Project implementation where retailers schedule regular updates from all involved based on the agreed timeline (e.g., from x to y by when). Persistence is important to success. Challenges to the FIP/AIP process usually include inadequate communication and/or misalignment of stakeholder goals and objectives. Retailers should expect and plan for occasional stalls in momentum, but continue to encourage and engage stakeholders throughout the timeline of the project. This will ensure continuous improvement.

Above all, Pizzuti and Salamone encourage retailers to stick to their knitting, "it is easy to get overwhelmed by the breadth of marine conservation issues out there. Seafood buyers get pulled in many directions and they are asked to lend their support to a variety of Fishery Improvement Projects. We just can't join them all. Publix and Wegmans share the philosophy of sticking to what we know best and working with our existing suppliers to support improvement projects in the fisheries and farms we routinely source from. We firmly believe that if every retailer does the same, then all fisheries globally will be improved in time. Spreading ourselves too thin is a recipe for failure, but working within our existing sphere of influence throughout the seafood supply chain can be the key to success," said Pizzuti and Salamone.

# CONCLUSION

There is clear evidence that science-based management is necessary to end overfishing, to rebuild overfished stocks, and to responsibly manage global fisheries at sustainable levels. Since 2000, 34 overfished stocks in the U.S. have been fully rebuilt. Some recent additions to this success list include: pink shrimp (*Farfantepenaeus duorarum*) in the South Atlantic region, yellowtail flounder (*Limanda ferruginea*) in the Southern New England/Mid-Atlantic region, and North Atlantic swordfish (*Xiphias gladius*) in the U.S. Atlantic and Gulf of Mexico waters.

Patience is vital to success. Rebuilding efforts and timelines can vary significantly. For example, as of 2013 red snapper in the Gulf of Mexico was in its thirteenth year of a thirty-two year rebuilding plan and Pacific Ocean perch in the Pacific Coast was in its fourteenth year of a twenty year rebuilding plan. In the case of red snapper, overfishing ended in 2009, and although the stock is not fully rebuilt, its population size and geographical range are the largest seen in decades, which demonstrates the capacity of this and other fisheries to rebuild under responsible management.

NOAA data indicates that in 2013, 82 percent of seafood stocks assessed in the U.S. were identified as not overfished. Ongoing rebuilding efforts that employ the FIP or AIP conservation models can help to replicate fishery management success globally, but as evidenced in the U.S., these projects require longtime commitment by stakeholders to achieving the necessary supply chain engagement, project management, process transparency, and policy enforcement. In the words of Jeanne von Zastrow, Senior Director of Sustainability for the Food Marketing Institute (FMI), "We commend our members for supporting the FIPs and AIPs profiled above. Retailers have become increasingly aware of their impact on the environment and the best of them are taking aggressive action to support sustainability throughout the supply chain. There is clear evidence that FIPs can be successful in many ways, from rebuilding stocks to initiating trusting partnerships. It is our hope that this document and the availability of FMI's Sustainable Seafood Committee members to coach and advise you will build momentum and encourage you and your company to take action and join forces to help rebuild at-risk fisheries both domestically and abroad."

# APPENDIX A – Status of World Fisheries

Food and Agriculture Organization of the United Nations
*for a world without hunger*

Fisheries and
Aquaculture Department

## Trends in capture fisheries development

For the two decades following 1950 world marine and inland capture fisheries production increased on average by as much as 6 percent per annum, trebling from 18 million tonnes in 1950 to 56 million tonnes in 1969. During the 1970s and 1980s, the average rate of increase declined to 2 percent per year, falling to almost zero in the 1990s. This levelling off of the total catch follows the general trend of most of the world's fishing areas, which have apparently reached their maximum potential for capture fisheries production, with the majority of stocks being fully exploited.

Adequate management of stocks is necessary to avoid overfishing

FAO/21380/T.Dioses

**Related topics**

Capture fisheries resources

Inland capture fishery statistics

Trends in high seas fisheries

**Related documents**

Review of the state of world fishery resources: Marine fisheries

Review of the state of world fishery resources: inland fisheries

The economic viability of marine capture fisheries (SOFIA 2000)

### Marine catch

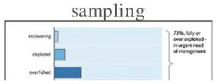
World marine catch totals continue to flatten off following the general trend of most major fishing areas of the world were fisheries have evolved from a developing to a more mature and in some cases senescent phase. When known and traditional fish stocks and fisheries are taken into account, the total marine catches from most of the main fishing areas in the Atlantic Ocean and some in the Pacific Ocean seem to have reached their maximum potential years ago and, therefore, substantial total catch increases from these areas are unlikely. In contrast, growth in aquaculture production has shown the opposite tendency. Starting from an insignificant total production, inland and marine aquaculture production grew by about 5 percent per year between 1950 and 1969 and by about 8 percent per year during the 1970s and 1980s, and it has further increased to 10 percent per year since 1990.

### Trends by species

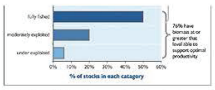
In 1997 FAO published the results of an analysis of the landings of 200 species from particular oceanic areas (species-area combinations referred to as "resources") which account for 77% of world marine production. This analysis offers an important additional perspective to the levelling off of the growth in capture fisheries production. Four examples of the 12 groups used in the analysis are presented, reflecting phases in the development of a fishery, namely: the undeveloped, developing, mature and senescent phases. These phases reflect the evolution of a fishery from stable, as yet undeveloped, to the rapidly rising level of productivity during which landing rates rise and then fall until a point of maximum landings are reached. Finally, in the senescent stage, the rate becomes negative as the level of landings falls.

Results showed that 35% of these 200 major fisheries resources were senescent, that is, showing declining yields. A further 25% were mature (or fully exploited), 40% were still developing and there were none that remained at a low-exploitation level. Thus about 60% of the world's major fisheries resources were found to be either fully exploited or experiencing declining yields. As few countries have effective control over fishing capacity, these resources are in urgent need of management to end

Figure 1: Summary of state of stocks, as analyzed in a broad FAO sampling



overfishing or to restore depleted stocks.



FAO/Fishery Industries Division

## The state of stocks

In addition, FAO holds information on the state of 392 of the 696 stock items recorded in their database, representing a wider set of resource items than mentioned above. A more recent analysis of these 392 items, summarized in **Figure 1**, shows that 6% of these stocks appear to be underexploited, 20% moderately exploited, 50% fully exploited, 15% overfished, 6% depleted and 2% are recovering.

While some 76% of these stocks are at or greater than a biomass level approximating that needed to harvest at an optimal level, some 73% are in need of management if they are to avoid becoming overfished or, in the case of those already overfished, if they are to be rebuilt. Some fisheries in this position are under effective management, where access to the fisheries has been limited, thus limiting pressure on stocks. But many fully fished resources are not adequately managed and are therefore vulnerable to rapidly moving into decline, becoming overfished or depleted.

Source: FAO website

# APPENDIX B – What is an Aquaculture Improvement Project (AIP)?

Approximately 550 aquatic species are currently farmed all over the world and accounts for nearly 50 percent of the world's food fish. Many believe that the future growth of the seafood sector will come mainly from aquaculture, but as aquaculture production intensifies so do environmental and social concerns around the overuse of antimicrobial agents to control diseases, escapes of invasive alien species into the environment, and pollution of surrounding waterways.

An Aquaculture Improvement Project (AIP) is as an alliance of producers, processors, suppliers, and buyers working together to develop integrated strategies to manage the bio-security, business, environmental and social issues of a fish farm or a fish-farming region. Currently, there are two main types of AIPs: farm-level projects aimed at meeting the standards of third-party certifiers like the Aquaculture Stewardship Council (ASC) or the Best Aquaculture Practices (BAP); and zonal/regional projects where groups of farms collaborate to work on addressing their shared ecosystem impacts.

AIP activities usually work to increase the understanding and implementation of environmentally preferred stock density models, processes to address disease outbreaks, practices to avoid species escapes, and policies to minimize or eliminate water exchanges.

According to the Food and Agriculture Organization of the United Nations (FAO), the best managed AIPs embody three key characteristics, they:

- Promote sustainable aquaculture development, especially in developing countries, through better environmental performance of the sector, through health management and bio-security
- Provide regular analysis and reporting of aquaculture development status and trends at global and regional levels, sharing knowledge and information
- Develop and implement efficient policies and legal frameworks which promote sustainable and equitable aquaculture development with improved socio-economic benefits

[Source: FAO website]

Achieving long-term economic, social, and environmental sustainability in the global aquaculture sector depends primarily on continued commitments by governments and key stakeholders in the seafood industry to provide and support a good regulatory and economic framework for the sector. As the sector further expands, intensifies and diversifies, the most effective AIPs will be designed to holistically and proportionally address a variety of concerns including: animal health and welfare, food safety, environmental integrity, and socio-economic issues.

# RESOURCES

## Association

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## Non-governmental organization (NGO)

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World Wildlife Fund – US
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## Online

Conservation Alliance for Seafood Solutions (CASS)
http://solutionsforseafood.org/sites/default/files/documents/FIP-Guidelines.pdf

Food and Agriculture Organization of the United Nations (FAO) Fisheries and Aquaculture Department
http://www.fao.org/fishery/sofia/en

National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries)
http://www.nmfs.noaa.gov/

Sustainable Fisheries Partnership (SFP)
http://www.sustainablefish.org/fisheries-improvement/fip-toolkit/fip-toolkit-overview