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Caught in the USA – Benefits of Buying Local, Sustainably Harvested Seafood

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Introduction

A growing number of the Nation's seafood consumers place a high value on sustainably harvested seafood. Concerns about the consequences of fishing operations, specifically, overfishing, unmarketable bycatch, and habitat impacts are all considerations that can enter into the buying habits of consumers. However, locally caught seafood insures sustainability through compliance with U.S. laws and regulations – among the strictest in the world, and creates employment, incomes, valued added through the supply chain, and resilient local fishing communities.

Privately funded programs that rank or actually certify sustainable fisheries such as Monterey Bay Aquarium's Seafood Watch Program or the Marine Stewardship Council, respectively, alleviate much of that concern by directing consumers to specific fisheries. Conversely, other programs strictly inform consumers for making their own sustainable-seafood choices (i.e., NOAA's FishWatch Program[4]).

The Code of Conduct

The long-term, sustainable use of fisheries resources has been recognized for several decades. In 1991, the Food and Agriculture Organization of the United Nation' (FAO) Committee on Fisheries, responding to a global acknowledgment that fisheries resources could no longer sustain rapid exploitation and development, called for a new approach leading to responsible and sustained fisheries (FAO, 1995). The outcome was the formulation of the Code of Conduct for Responsible Fisheries[5] (Code), that through a collection of principles, goals and elements for action, provides a framework to ensure sustainable exploitation while reducing the negative impacts of fishing activities on marine ecosystems (FAO, 1995). While implementation of the Code is completely

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[3] The views expressed herein are those of the authors and do not necessarily reflect the views or policies of NOAA Fisheries.

[4] http://www.fishwatch.gov

[5] More than 170 members of the Food and Agriculture Organization of the United Nations adopted the Code of Conduct for Responsible Fisheries in 1995.

voluntary, Coll et al. (2013) found a clear and significant increase in the sustainability of exploited ecosystems for those countries exhibiting higher compliance with the Code.

U.S. federal fisheries are managed under several legislative mandates, especially the Magnuson-Stevens Fishery Conservation and Management Act (MSA), enacted as the Fishery Conservation and Management Act in 1976 and substantially amended in 1996 by the Sustainable Fisheries Act and in 2006 by the Magnuson-Stevens Reauthorization Act (MSRA). The implementation of these mandates by NMFS, through federal regulations, in coordination with the agency's own science and policy guidelines, assures that the provisions and goals of the Code are put into practice. In other words, NMFS fundamentally assumes, that through its legislative mandates, strategic plans and programmatic activities, that the goals of the Code are achieved, or at least the agency is making significant and measurable progress toward them (NMFS, 2012a).

For example, the Code advocates that countries articulate clear and well-organized fishing policies in order to manage their fisheries for the primary purpose of preventing and eliminating overfishing (Code Articles 6, 7 and 8). Correspondingly, one of the primary directives of the MSRA is to end and prevent overfishing in all U.S. commercial and recreational fisheries by the use of annual catch limits (NMFS, 2012a).

Similarly, the Code's Articles 7 and 8 (fisheries management and fisheries operations, respectively) recommend that "States take appropriate measures to minimize waste, discards, catch of non-target species, both fish and non-fish species, and impacts on associated or dependent species, in particular endangered species." Federal fisheries under the MSRA, along with other Congressional mandates especially the Endangered Species Act which protects endangered and threatened species, and the Marine Mammal Protection Act, which safeguards marine mammals in setting fishing plans, require that non-target species be avoided and even sets incidental take limits in operating the fishery when necessary.

Further, under National Standard 9, the MSRA requires fishery management plans to establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, and include conservation and management measures that, to the extent practicable, minimize bycatch and when avoidable, minimize the mortality of such bycatch (NMFS, 2012a).

Sustainability Is a Matter of Prediction

The concept of sustainability connotes a system's ability to survive, endure, or persist but in actuality, sustainability is more of a prediction problem rather than a definition problem (Costanza and Patten, 1995). That is, management actions taken today must be designed to anticipate the maintenance or a progression towards a system's persistence tomorrow. There are never any guarantees that an expected outcome will happen, but certainly mangers can narrow the gap of uncertainty by applying science in their forecasting efforts. NMFS' fisheries management, as part of NOAA's broad scientific focus on oceans and atmospheric conditions, brings a strong science element into its forward-thinking, decisions that includes best available information for determining fish

stock status, evaluating whether a fishery action will jeopardize the continued existence of protected species, and anticipating that mitigative steps will render habitat impacts inconsequential.

For example, when setting annual catch limits to avoid overfishing a particular fish species, NMFS now accounts for both the scientific and management uncertainty in setting those limits. Accounting for these uncertainties improves the predictability that threshold limits will not be reached. Similarly, NMFS ensures that anticipated takes of ESA-listed species are kept below established threshold and adverse effects are avoided by requiring the use of particular conservation measures during fishing operations including gear modifications, time-area closures, and even closing a fishery should bycatch limits be breached.

U. S. Demand and Transfer Effects

Acknowledging that U.S. federal fisheries are managed for sustainability is an important feature that U.S. consumers should be aware. The United States is a major seafood-consuming country ranked second behind China in total fish and shellfish consumption (NMFS, 2012b). In 2011, the average U.S. resident consumed 15.0 pounds of seafood with about three quarters of that protein fresh and frozen finfish and shellfish, and almost a quarter canned seafood, primarily tuna (NMFS, 2012b). To meet this demand, much of the capture fisheries consumed in the United States is imported. Consequently, as concerns about consumer choices for sustainably harvested seafood continue, suppliers need effective ways to distinguish their fishery products as sustainably harvested (Bartram et. al., 2010).

With the globalization of seafood markets, seafood products often move from countries with weak governance to countries with strong governance (Smith et. al., 2010). Weak governance countries, usually developing countries, often fail to control overfishing and bycatch. In an analysis of country compliance with Article 7 of the Code (i.e., fisheries management), developed nations on average generally scored twice as high as those from developing nations (Pitcher et. al., 2009). Yet, with prevailing conditions in the global seafood market, it is more advantageous for many developing countries to be seafood exporters and generate surplus value (Smith et al., 2010). This can especially occur when developing countries fill the void created in a fishery whose production is stopped or reduced due to regulatory restrictions or underutilization. This displacement of production (i.e., "spillover or market transfer effect") to countries with weak governance may also cause greater environmental damage (Chan and Pan, 2012). A good example transfer effects was the closure of the Hawaii longline swordfish fishery from 2001 to 2004 when non-U.S. fleets increased their production in the Pacific Ocean resulting in an estimated increase in sea turtle bycatch compared to the Hawaii fishery (Chan and Pan, 2012).

Fishing activities create a broad range of environmental impacts beyond bycatch. These other negative impacts are often overlooked in sustainability discussions within the seafood sector (Pelletier et al., 2007; Vazquez-Rowe, et al., 2010). Life cycle assessments (LCA) designed originally to calculate the overall environmental load in the

manufacturing sector, are increasingly being applied to food productions systems including fishing (Hospido and Tyedmers, 2005). For fishing, impacts may include, but are not limited to, materials used in the construction of fishing vessels, fishing gear, the combustion of fuel while fishing, transporting catch to markets, further processing, the discharge of wastes, and the loss of fishing gear at sea.

Hospido and Tyedmers (2005) employed LCA to quantify the scale and importance of emissions that result from the range of industrial activities associated with in the Spanish purse seine fishery for skipjack and yellowfin tunas. The authors found that when Spain's tuna fishery was shifted to distant water regions, there was a disproportionate environmental impact due to the increased consumption of diesel fuel and use of anti-fouling paint. Buchspies et al. (2011) found that the second highest impact in the Danish frozen cod fishery came from the storage and distribution of the fillets due to refrigerated transport of product.

Buying Local

When considering the broad range of impacts resulting from fishing operations, there are clear environmental and economic advantages when fishery resources are harvested and sold locally. These benefits include availability of fresh, higher valued seafood for consumers, employment and incomes throughout the supply chain, and compliance with strict U.S. environmental and fisheries regulations. Moreover, a social connection can form between producers and consumers, thereby providing value added to local communities in economic and social terms. Fishermen and communities around the United States are moving more towards community-supported fisheries (CSF), an innovative program modeled after community supported agriculture programs. CSFs are a form of direct marketing in which consumers provide upfront payments to fishermen in exchange for scheduled seafood deliveries (Brinson, 2011). In recent years these CSFs have cropped up all over the United States on both coasts. Joining a CSF provides consumers with access to high-quality novel types of fish and creates positive interactions with the producers of their food. Fishermen receive higher prices for their catch, are guaranteed a more stable income, and can activate political and regulatory support through direct interaction with consumers (Brinson, 2011).

Seafood sustainability goes beyond impacts that traditionally have focused directly on the environment, that is, the physical consequences of fishing operations (Hospido and Tyedmers, 2005). However, fishing is also a business and there are associated costs. Fishermen, as well as ports and waterfronts, make substantial long-term investments that support fishing activities. Economic and social aspects of sustainability also have to be addressed if fishing operations are to be fully sustainable (Helvey et.al., 2012). Fishermen will not fish if their fishing practices are constrained to the point where costs exceed profits. Striving for continued progress in reducing environmental impacts while achieving fishing practices that remain economically viable are key to sustainability.

In closing, despite the growing resolve for sustainable seafood in the United States as well as several other developed countries, pressure on global fisheries will continue and likely increase. The FAO estimates that today's population of just over 7 billion people

will reach 9.3 billion in 2050, and will require a 70 percent increase in global food production (FAO, 2012). Nearly all of that population growth will occur in developing countries, which, for the most part, rely on seafood for livelihoods and day-to-day subsistence. This will pose an even greater pressure to harvest seafood as an important source of protein, and much of the harvesting will be done in fisheries not necessarily managed with the same objectives for responsibility and sustainability as in the United States.

The importance of food security and the fishing practices used in harvesting seafood will continue to frame decisions in the buying habits of U.S. seafood consumer. Helping consumers understand that seafood resources "Caught in the USA" yield a triple dividend of locally caught, fresh seafood; employment, income, and resilient communities; and especially responsibly harvesting that complies with multiple laws and progressive management to ensure practices that maintain diverse and productive marine ecosystems.

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