

THE INTERNATIONAL SEAFOOD SUSTAINABILITY FOUNDATION (ISSF): DEVELOPING A TUNA CONSERVATION INITIATIVE ¹

"The tragedy of the commons develops in this way. Picture a pasture open to all. It is to be expected that each herdsman will try to keep as many cattle as possible in the commons. [...] As a rational being, each herdsman seeks to maximize his gain. [...] The rational herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another; and another... But this is the conclusion reached by each and every rational herdsman sharing a commons. Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit – in a world that is limited. [...] Freedom in a commons brings ruin to all"

Garret Harding, The Tragedy of the Commons, 1968ⁱ.

As she flew to Brussels to attend the second Board Meeting of the year, in April 2013, Susan Jackson, President of the International Seafood Sustainability Foundation (ISSF), looked out of the window at the vast extension of the Atlantic Ocean. It was hard to believe that the tuna resources of such a huge extension could ever face a limit, and that human mankind would ever be about to reach it. Preventing mankind from going beyond that limit, and ensuring a healthy future for the tuna stocks and for the people and companies that relied on tuna for their livelihood, was a complex undertaking, but four years of intense work, after the world's biggest tuna processing companies sponsored the creation of ISSF in 2009, were starting to show that it was possible.

The Brussels meeting was critical to the success of ISSF in meeting its objectives. The five year strategic plan for 2013-2027 was to be discussed and some important decisions lay ahead. ISSF work to-date had focused primarily on establishing a strong profile for science-based approaches to tuna sustainability, advocating scientifically sound measures and initiatives, developing relationships with the intergovernmental organizations in charge of managing tuna fisheries, engaging other NGOs (non governmental organizations) and building the ISSF base of participating companies, which included most of the largest tuna canning processors, traders and marketers in the world.

¹ Case by the Research Division of the Instituto Internacional San Telmo, Spain. Prepared by Professor Jose Antonio Boccherini Bogert with the collaboration of Gabriel Ochoa de Zabalegui, Research Assistant. The document has been written with the economic support of Frinsa del Noroeste, S.A., Grupo Conservas Garavilla, S.L. and Sállica Industria Alimentaria, S.A. To be used as a basis for class discussion rather than to illustrate effective or ineffective handling of an administrative situation.

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Since ISSF was founded, some environmental groups had succeeded in raising pressure, particularly in Europe, and forcing retailers to adopt some commitments that were considered unrealistic by most tuna canning companies. However, it was increasingly evident that RFMOs and NGOs would not be able to make real change happen on their own. ISSF had defined a more inclusive approach, which aimed to align the entire system and value chain, and the fishing community was now watching for more definitive results. The baseline had been set, and it was time to take the next step forward towards complete and verifiable tuna sustainability, by ensuring that the required conservation and management measures were widely adopted and respected. The question to be debated and decided was *how*. With that idea in her mind, Jackson went back to her papers to thoroughly prepare for the meeting.

THE GLOBAL TUNA INDUSTRY

Tuna: the last wild protein available in large quantities

Tuna is a highly migratory species that travels thousands of miles throughout its life. They move constantly searching for food, advancing 1.5 times their length per second, and can cross the Atlantic Ocean up to 7 times in their lifetime. Their diet is based on fish, squids and crustaceans, with a daily ration up to 5-15% of their weight. Five species of tunas are fished globally: albacore, bigeye, yellowfin, skipjack and bluefin (Exhibit 1). There are 23 stocks^{2,3} of the major tuna species (Exhibit 2). Skipjack is the most abundant species and also the most prolific (they are known as "oceans rabbits" for their fertility). Skipjacks are fished primarily for canning. Bigeye tunas are frequently served in *sashimi* or *sushi* dishes or as fresh or frozen steaks or loins, and are also used for canning. Yellowfin and albacore are targeted both for canning and the frozen steak market. Bluefins are highly appreciated and used almost exclusively in *sashimi* or *sushi* dishes.

The global catch of tuna in 2011 was 4.35 million tons⁴, a 3% decrease from 2010. Catches increased steadily until the early 2000s and have stabilized since then. Exhibits 3 and 4 present information on global tuna catches.

Tuna fishing methods

More than 85% of total catches are made using one of three gear types: purse seine, longline and pole-and-line (see Exhibit 5). Exhibit 6 shows the catch distribution per gear.

- *Purse seine (PS⁵)*: this method uses nets to encircle the school and transfer it to the vessel's deck. Purse seine (PS) vessels target mostly yellowfin and skipjack. PS is

² A tuna stock is defined by the combination of one species and one of 6 ocean areas: Eastern Pacific, Western Pacific, Pacific Ocean (rest), Atlantic Ocean (incl. Mediterranean Sea), Indian Ocean and Southern Hemisphere (for Southern bluefin). Not all tuna species are present or fished in all zones.

³ Foot and endnotes convention in this document: Footnotes (with arabic numerals) provide comments about the text. Sources are referenced with roman numerals as endnotes. Sources in footnotes are provided *in situ*.

⁴ The yearly total global marine capture of food fish is around 84 million metric tons.

⁵ See Appendix 3 for a glossary of acronyms used in this case and in the tuna industry.

extremely efficient, enabling to catch large quantities of tuna.

- *Long lines (LL)*: this gear involves the use of a mainline, which can be more than 100 km in length, with as many as 3,000 branch lines, each with a baited hook. This method was more suited to catch deep-swimming tuna, like albacore. LL gears could capture several species of tunas, plus other types of fish, particularly swordfish and marlins. Most large LL vessels target bigeye tuna and account for about 15% of the world catch. Japan, followed by Taiwan and Korea, own the largest LL fleets.
- *Pole and line (P&L)*: this gear involves the use of a hook and line attached to the end of a pole. Fish is aggregated around the vessel by scattering live bait into the sea (generally sardines or anchovies) and by using a water spray that creates the illusion that the water surface is alive with small fish, causing the tuna to approach for food. P&L fishing captures 10% to 15% of the world tuna, a big deal of it for self-subsistence.

Large scale PS and LL vessels have on board freezing capacity and can stay in the sea for months before returning to port. In recent years PS catch increased rapidly, mostly due to the use of *fish aggregating devices* (FADs, see Exhibit 7), which are floating objects (typically 4 to 6 m² bamboo rafts) around which tunas instinctively gather for reasons not yet known. FADs are often equipped with satellite-linked sonar devices that inform the vessels about the presence of fish. More than 60% of PS catches are made using FADs, which sharply increase efficiency, because they help vessels reduce the time wasted searching for fish.

Tuna farming (aquaculture) is considered economically unfeasible for most species, due to the high feeding costs. Furthermore, this feeding activity raises concerns about the total environmental impact. Farming is used marginally for some high value species, such as bluefin and bigeye.

The tuna fishing industry

Of the total catch of 4.35 mt of tuna, more than 3 million tons were destined for canning. Tuna for canning is largely sourced from PS vessels targeting skipjack and yellowfin and LL vessels targeting albacore for canning. PS vessels catch 65% of the total tuna and more than 90% of the canning grade tuna.

A study estimated the global fleet of authorized PS vessels to be 1,664 at the end of 2011. Out of these, 678 vessels were large-scale PS vessels permanently targeting tunaⁱⁱ. Exhibit 8 shows the fleet distribution by flagging country. This distribution did not reflect the actual vessel ownership per country, as vessels could be flagged in a different country for taxing reasons, to avoid restrictive legislations in the home countries or to obtain access to fishing licenses. For instance, in addition to the 34 Taiwan-flagged vessels, Taiwan nationals owned 25 vessels flagged elsewhere and had significant stakes in 18 US PS vessels, which made the Taiwan-owned fleet one of the biggest in the world.

In the last 20-30 years, growing demand for canned tuna led to a massive growth in terms of vessel numbers and catching capacities. Japan, Taiwan, Korea, the US, the EU