International Seafood Sustainability Foundation

FAD: Fact Aggregating Document

There is no quick fix or simple solution to reverse unsustainable practices in tuna fisheries. True sustainability can not be achieved by simply switching fishing methods, segmenting off a piece of the ocean or abandoning efficient fishing methods without a sustainable alternative. Supporting better, responsible practices requires commitment, innovation and some courage.

Following is a compilation of insights, solutions and strategies about the key issues surrounding sustainability.

Content:

Summary of Actions and Resolutions

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Traceability

ISSF Participating Companies maintain a credible scheme that traces tuna from capture to store shelf, including the name and flag of catcher and transshipping vessels, fish species, ocean of capture corresponding to tuna regional fisheries management organization (RFMO) area, fishing trip dates, fishing gear, date the company took ownership of the fish and each species by weight.

IUU Fishing

ISSF Participating Companies have each independently committed to refrain from transactions with vessels on any RFMO blacklist identified as having engaged in illegal, unreported or unregulated fishing activities. Our traceability scheme ensures the Participating Companies keep this pledge and if product is later found to have come from vessel placed on such a list it will be recalled from the marketplace.

Marine Protected Areas

ISSF supports marine protected areas (MPAs) of sufficient size and duration, as determined by sound science, to accomplish clear conservation objectives for tuna populations and the ecosystem upon which they depend.

Driftnets

All ISSF Participating Companies have each independently committed to refrain from transactions in tuna caught using indiscriminate large-scale pelagic driftnets.

Vessel Registry

No ISSF Participating Company will engage in transactions in tuna with vessels that are not registered with the RFMO in the region in which they are fishing, if they are of a size that the RFMO requires registration. ISSF also supports and encourages the use of unique vessel identifiers (UVI) in all tuna fisheries to help eliminate IUU fishing and Participating Companies will refrain from transactions in tuna from vessels that fail to secure a UVI by May 31, 2011.

Data Support

In order for RFMOs to function more effectively, as intended, the scientific advisors of these governing bodies need access to the most current and comprehensive data available. All ISSF Participating Companies provide data for their purchases to RFMO scientists, including: name of vessel, call sign, flag state, start and end dates of unloading, name of catcher vessel(s) and/ or processor originating transshipment(s), date(s) of transfer of fish from catcher vessel(s) by vessel, and/ or transfer from processor(s) to carrier, location of transfer(s) for transshipped catch, out turn or bill of lading (weight of catch by commercial species/ size categories, by catcher vessel(s) and/ or processor(s) or transshipment(s). These data points are generally used to determine catch by species, and in analyses of catches recorded in fishing vessel logbooks and observer records.

Sea Turtle Habitat Restoration and Protection

While the most significant threats to the world's endangered sea turtles are habitat destruction and predation, fishing practices can also have an impact on these vulnerable populations. That impact is minimal in purse seine fisheries but does increase in occurrence with the use of long line vessels, particularly those smaller vessels that fish closer to shore.

In an effort to protect these creatures where they live, the ISSF Scientific Advisory Committee helped to identify local, on-the-ground projects that are already achieving results. Instead of reinventing the wheel, ISSF provided additional funding to these existing programs, including: the conservation of Solomon Islands Leatherbacks in a program conducted by The Nature Conservancy and their regional partners; the conservation of Central American Hawksbill facilitated by The Ocean Foundation; the mitigation of turtle meat consumption on Santiago Island, a program being run through the Cape Verde Sea Turtle Network; and a sea turtle conservation program managed by Proyecto TAMAR in Brazil.

Promoting Science

ISSF President Susan Jackson speaking at the first tuna conference in the Seychelles.

A core focus of ISSF is the promotion of science-based initiatives to help improve tuna fisheries. In the two years since the coalition's launch, ISSF has funded and facilitated a series of highly attended workshops and seminars with participation from leading scientists, economists, fishers, government officials, industry representatives and conservationists.

These events include: Taking Stock: Seychelles, Taking Stock: Brisbane, the Bellagio Conference on Sustainable Tuna Fisheries, The Napa Conference on Allocation and the Meeting on Mitigation of Bycatch in the Tuna Purse Seine Floating Object Fisheries and the ISSF Stock Assessment Workshop in Rome.

Bycatch Reduction Project

ISSF is facilitating a globally coordinated, three-year at-sea project to identify best practices, new techniques and enhanced technologies that will allow fishers to minimize the amount of non-targeted fish and other marine life captured as a result of purse seine fishing for tuna. This research is being shared with vessel crewmembers through workshops hosted in communities around the world, fostering a direct dialogue that can have an immediate impact on the practices of fishers who supply the world's processors with tuna.

Fishing Method Facts

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Identifying the most 'sustainable' fishing method for tuna is difficult. Each gear type has advantages and disadvantages on the water.

Purse Seine

Purse seine fishing for tuna accounts for more than 60 percent of the world's tuna catch. This type of gear uses a net set vertically in the water. When a school of tuna is sighted, the purse seine vessel encircles the school and traps them in the net by linking back up with a smaller vessel, referred to as a skiff, which holds the other end of the net. The crew uses a winch to close the bottom of the net by pulling a chain that is looped through rings at the bottom of the net, and then the closed net, with the fish trapped inside, is rolled close to the side of the purse seiner. Once alongside the vessel, the fish is 'scooped' out of the net and transferred into storage wells filled with refrigerated sea-water where the fish is ultimately frozen.

Advantages

This method is extremely efficient and consistent enabling fishers to catch and freeze large quantities of tuna. Purse seine vessels are the most widely used method to catch skipjack tuna, which is a fast-growing and healthy species in every region of the world. When fishing on free-swimming schools of tuna, purse seine fishing has an average bycatch rate that is less than 1 percent.

Disadvantages

While most any vessel captain will take advantage of free-swimming schools, these types of sets are not regular making for inconsistent catches. Chasing after free-swimming schools also consumes more time and resources, including fuel. For that reason most purse seine fishing vessels also use floating objects, or fish aggregating devices (FADs), to attract tuna. While making fishing results more efficient, this method leads to a higher average bycatch rate of roughly 5 percent, according to the United Nations Food & Agriculture Organization (UN FAO).

Purse seine fishing on FADs can also lead to greater catches of small tuna, typically of the bigeye and yellowfin species. This can represent 15-20% of the catch from a purse seine FAD set. In most cases, the non-targeted smaller tuna are also utilized for tuna processing.

Longline

Longline fishing for tuna accounts for about 14 percent of the world's tuna catch. This method consists of a main line, kept afloat with buoys, from which branch lines are suspended, each with a baited hook attached to the end. In addition to supplying the tuna processing industry, Longline fisheries also supply the fresh and frozen tuna markets.

Advantages

This method is the best way to catch fish that swim deeper, such as larger albacore, bigeye and yellowfin. Fish is caught 'one by one' and frozen quickly in blast freezing systems, the same type of freezing used for 'sashimi' fish.

Disadvantages

Longline fishing has one of the highest bycatch rates of any gear used to fish for tuna. The average bycatch rate is 28 percent of the total catch, according to the UN FAO. Mitigation methods have been developed to minimize the bycatch impact of longline fishing on sea birds and turtles but these methods are just recently being implemented

Pole and Line

Pole and line fishing accounts for about 10 percent of the world's tuna catch. These smaller fishing vessels uses manpower to fish tuna with long poles. This method does not supply exclusively to the processed market and roughly half of the fish caught using this method is sold on the fresh and frozen markets.

Advantages

The most desirable aspect of this method is that there is virtually no bycatch of sharks, turtles and other larger marine animals. Catching tuna one-by-one allows fishers to make sure they're reeling in tuna.

Disadvantages

There are negative environmental impacts from pole and line fishing. This method requires the capture of live bait, like sardines and anchovies, which fishers get by using a seine net. These small fish often come from stocks that local fishers rely on but are generally not managed. Greater catches using pole and line gear would require more bait and studies show global bait fisheries could not sustainably support an increase in catch.

As noted for purse seine FAD fishing, the catch of small tuna is also significant in pole and line fisheries, and has been record as high as 10%.

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Troll

Troll fishing for tuna makes up about 2 percent of the annual catch. These fisheries mainly target albacore tuna, using lures towed behind a small vessel.

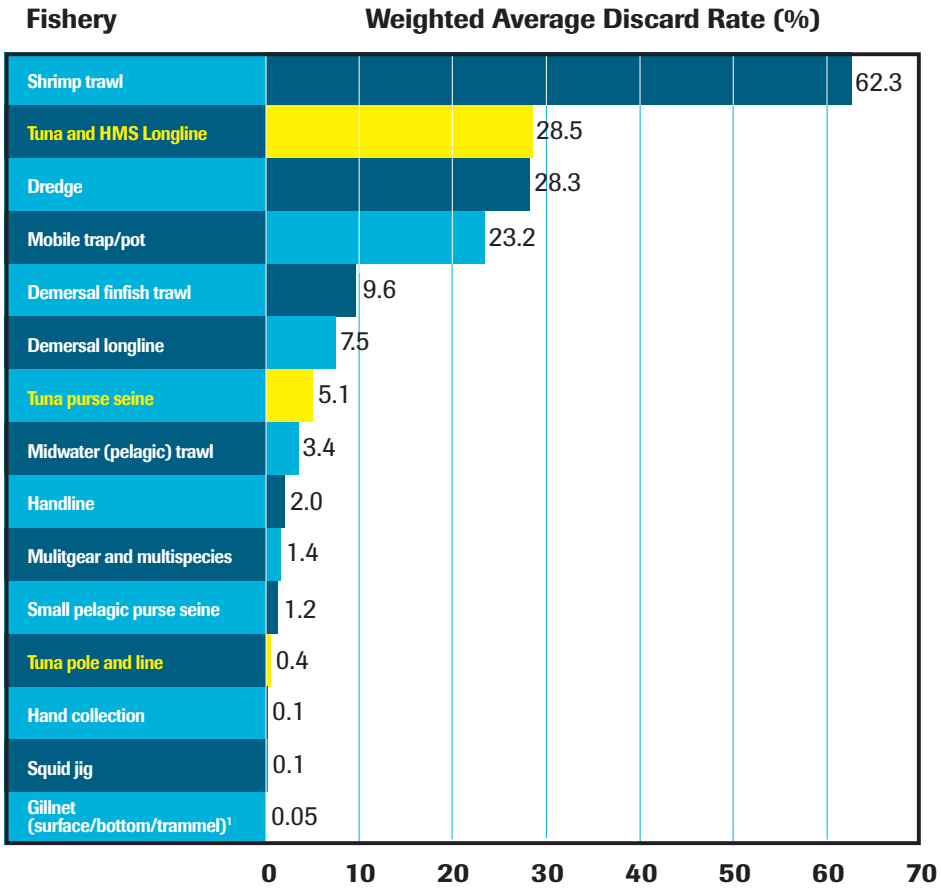
Advantages

This method has minimal bycatch, although there is very limited data available.

Disadvantages

Vessels that use this gear to fish for tuna typically end up taking a significant number of juveniles or smaller sized tuna.

Data from the United Nations Food and Agriculture Organization helps to put bycatch in tuna fisheries into some statistical perspective.



[1]Low estimates in some fisheries (e.g. gillnet) are partly a result of the inclusion of high Chinese catches with low or negligible discard rates.

FAD FAQ

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What is a FAD?

A fish aggregating device, or FAD, is simply a floating object that attracts fish. There are two main types of FADs, natural and man-made; man-made can be drifting or anchored FADs.

- Natural FADs are most commonly logs and branches but may also include debris left in the environment.

- Most artificial FADs are constructed of bamboo and other floating materials, with panels of netting submerged underwater. When left at-sea, tuna and other marine life gather underneath the FAD. Fishers use sonar or electronic buoys to monitor and relocate FADs. Enhanced technology also allows a captain to remotely determine if the object has attracted tuna and calculate whether it would be worth the vessel traveling to the location to fish.

- Anchored FADs are floating objects that remain in a fixed location. Traditionally used in artisanal fisheries, today this technique is also being used further from shore.

Where are FADs located?

FADs are located in virtually every tropical ocean region of the world and some subtropical regions as well.

Why do vessels use FADs?

It is an extremely efficient way to fish. FADs allow a vessel to take a targeted approach, therefore minimizing the time needed to search for schools of tuna. In addition, FAD sets tend to be more successful, whereas free-swimming schools are more difficult to chase after and catch successfully. Thus, FAD fishing saves time, resources and fuel.

What fishing methods utilize FADs?

Purse seine fishing, which uses nets is the most widely used method to catch tuna, making up roughly 63% of the global catch. These vessels are also the most frequent users of FADs.

Pole and line – or baitboat – fishing makes up about 10% of the global tuna catch. These fisheries have significantly increased the use of floating objects in recent years.

(Sources: ISSF [2010] Status of the World Fisheries for Tuna; ICCAT [2008] Report of the 2008 ICCAT Yellowfin and Skipjack Stock Assessments Meeting, SCRS/2008/016)

What is the rate of bycatch when fishing on FADs?

Bycatch in purse seine FAD fisheries – the catch of marine life fishers did not set out to target – is largely other non-targeted, small tuna. Other species of fish, sharks and other marine life can also be captured incidentally.

The amount of bycatch in purse seine FAD fisheries can vary widely depending on the region, time of the year, vessel, crew experience and other factors. Typically, bycatch in FAD-based tuna fisheries is made up of other fish, sharks and rays, averaging about 5% of the total catch. Unassociated purse seine sets, or fishing without FADs, results in less bycatch, ranging on average from 0.5% - 1%.

In addition to bycatch of non-target species, purse seine FAD fisheries generally catch more small, non-targeted tuna than bycatch. This can represent from 15-20% of a purse seine FAD set catch.

(Source: Calculation of data from various sources, including: Bannerman P. [2000] Preliminary Report on the Moratorium on the Use of FADs by Purse Seiners in Tuna Fishing in Ghana, pp 8; Chassot et al. [2008] Some Preliminary Results on Tuna Discards and Bycatch in the French Purse Seine Fishery of the eastern Atlantic Ocean, SCRS-08-117, pp 21; Romanov, E.V. [2002] Bycatch in the Purse Seine Tuna Fisheries of Western Indian Ocean, Fisheries Bulletin, 100, 90-105; IATTC [2008] Quarterly report of IATTC.)

Pole and line fisheries have limited bycatch of non-target species although the rate of capture of non-targeted small tunas can be as high as 10%. The biggest issue with pole and line fishing is that these vessels need to capture baitfish from largely unmanaged fisheries and growth of this form of fishing would lead to significant issues within the world's bait fisheries.

(Source: Moody Marine, Ltd. [2010] MSC Draft Assessment Report for Pole and Line Skipjack Fishery in the Maldives, Version 3, pp 41.)

How are FAD fisheries managed?

Generally, highly migratory tuna fisheries are managed by RFMOs – regional fisheries management organisations. These are governing bodies created by treaty amongst coastal nations and distant water fishing nations fishing a common region of ocean. RFMOs adopt conservation management measures, set quotas, authorise vessels and fulfill a host of related management responsibilities. Supporting the RFMO's in each of the world's major oceans are scientific bodies that develop fisheries science and provide conservation recommendations to be taken up by the RMFO member nations.

Purse seiners – depending on the region, their size and capacity – are required to meet certain requirements and follow guidelines set out by RFMOs. This includes registering, submitting data and adhering to conservation management measures.

The most common form of management in FAD fisheries has been temporary closures to fishing in areas of high concentrations of small tunas. Such restrictions are currently being enforced in all oceans.

Is anything being done to minimize the impact of fishing on FADs?

The short answer is – yes. RFMOs are increasing the amount of observer coverage on purse seine vessels. This is key to understanding the amount of bycatch generated from fishing on FADs in different areas at different times. The eastern Pacific Ocean already maintains 100% observer coverage on large vessels and the western and central Pacific Ocean is fast approaching that same goal.

The data already available tells us that the capture of small, non-targeted tunas is the biggest concern in purse seine FAD fisheries. While vessels set out to fish for skipjack tuna – a species that is healthy in every region it's found – they can also catch tuna from stocks that are not as healthy, or are even overfished. In addition, the catch of small individuals of species such as bigeye can be wasteful, because these stocks could support much higher yields if the individuals were allowed to mature before being caught. Scientists recognize this and, in recent years, have been aggressively studying and researching the use of FADs, their impact and ways to reduce the negatives.

The International Seafood Sustainability Foundation (ISSF) is facilitating a globally coordinated, three year, at-sea research project to identify best practices, new techniques and enhanced technologies that will allow fishers to minimize the amount of non-targeted fish and other marine life captured as a result of fishing for tuna. This research is being shared with vessel crewmembers through workshops hosted in communities around the world, fostering a direct dialogue that can have an immediate impact on the practices of fishers who supply the world's processors with tuna.

ISSF has also commissioned research in an effort to generate a comprehensive understanding of the impact of all fishing methods on the environment. These areas include the sustainability of pole and line bait fisheries and the fuel consumption of all vessel gear types used to fish for tuna.

Summary of Positions

International Seafood Sustainability Foundation

Position:

ISSF supports marine protected areas.

We agree with the concept that sometimes it is necessary to close off an area of ocean to fishing in order to protect the environment. However, ISSF does not endorse an arbitrary percentage of the oceans being closed for tuna, highly migratory species that are distributed globally.

First, closures must have clear objectives and must be supported by scientific reasoning. Closed areas can help preserve biodiversity, avoid overfishing and prevent conflicts among different users but, they cannot achieve all of these equally. Secondly, it must also be considered that marine protected areas or closures, even those based on scientific advice, will have a limited impact on tuna stocks. Tuna are highly migratory and do not remain in the same area for long. That means that fishing vessels will simply continue to catch fish outside of the closed area. This has been proven in the western and central Pacific Ocean where closures of certain areas did not lead to a reduction in catch, merely a shift in where tuna was caught . Sometimes, stopping all fishing during a period of time can have a more substantive impact on conservation, and is more easily enforced, than a permanent reserve – especially when there is no scientific support for such a reserve.

Position:

ISSF supports pole and line fishing for tuna

Currently, about 10% of the world's tuna fishing is done utilizing the pole and line method. This method is generally utilized by artisanal fisheries in smaller, developing coastal nations. The catch is split among several important markets – fresh/ frozen, local consumption and processed – making roughly half of what is caught currently available for canned tuna processing. Based upon a rough calculation, this means that only about 3% of the world's canned tuna market is supported by this form of fishing

Pole and line fishing can be a sustainable source for tuna. One of the most attractive features of these fisheries is that they do not land many non-tuna species. However, they do require large amounts of "baitfish" (different species of small pelagic fishes) that are used to attract the tuna schools. Thus, it is misleading to think that pole-and-line fishing is free of bycatch concerns. The amount of baitfish populations available to pole and line fishing is limited and bait fisheries need to be managed with the same diligence as tuna stocks. Based on the scientific evidence available, it would not be possible to significantly increase pole and line fishing without severely impacting the health of the various bait fisheries .

These fisheries can also have a significant level of bycatch of other tuna species, which may or may not be as healthy as the targeted stock. As an example, about 10% of the catch in the Maldives, a pole and line fishery that targets skipjack, is comprised of yellowfin and bigeye, most of it small .

It should also be kept in mind that if the demand for pole and line caught tuna increases, more vessels would be needed to catch the fish (assuming that there will be sufficient baitfish resources available). With near universal consensus that there is already excess capacity in tuna fisheries – meaning more vessels than the resource can support

– any growth in pole and line fleets must be met with a reduction in the capacity of other fishing gear types (i.e., purse seining and long line). Without that, any growth in pole and line fishing could negatively impact the health of global tuna stocks.

Finally, the pole and line method is extremely labor intensive and is significantly less efficient than purse seining and would require greater fishing capacity. Accordingly, an increase in pole and line fishing would have an extremely negative carbon footprint and would require substantially greater use of fossil fuels.

The bottom line is that tuna fishing will not be sustainable based upon a shift to one method. Sustainable tuna fishing will be comprised of several methods conducted responsibly.

[1] ISSF. STATEMENT OF CONCERN: Marine Protected Areas – International Seafood Sustainability Foundation. International Seafood Sustainability Foundation. 28 Apr. 2009. Web. 11 Mar. 2011. <http://iss-foundation.org/2009/04/28/statement-of-concern-marine-protected-areas/>.

[2] WCPFC. Review of the Implementation and Effectiveness of CMM 2008-01. Rep. no. WCPFC7 - 2010/15.rev 1. Honolulu: WCPFC, 2010. Print.

[3]ISSF. Status of the World Fisheries for Tuna. Rep. Washington, D.C.: ISSF, 2010. International Seafood Sustainability Foundation. Web. 11 Mar. 2011. <http://iss-foundation.org/science/reports/status-of-the-world-fisheries-for-tuna/2010-report/>

[4]Gillett, Robert. Replacing Purse Seining with Pole-and Line Fishing in the Western Pacific. Rep. ISSF, 2010. Web. 11 Mar. 2011. <http://iss-foundation.org/science/reports/bait-fish/>

[5]Moody International LTD. MSC Assessment Report for Pole and Line Skipjack Fishery in the Maldives. Rep. no. Ref: 82105/v. Derby: Moody International, 2010. MSC Assessment Report for Pole and Line Skipjack Fishery in the Maldives. MSC, 17 Sept. 2010. Web. 11 Mar. 2011. <http://www.msc.org/track-a-fishery/in-assessment/Indian-ocean/Maldives-pole-and-line-skipjack-tuna/?searchterm=maldives>

[6]ISSF. Bellagio Framework for Sustainable Tuna Fisheries. Rep. Washington, D.C.: ISSF, 2010. Bellagio Framework for Sustainable Tuna Fisheries. ISSF. Web. 11 Mar. 2011. <http://iss-foundation.org/science/reports/bellagio-report/>

Position:

ISSF is working to reduce the environmental impact of purse seine fishing for tuna with FADs

Tunas are attracted to floating objects and humans have taken advantage of this for centuries. Today, many modern vessels use sophisticated FADs that they 'plant' at sea and which transmit to the fishing vessel information about the amount of fish available under the FAD along with the FAD's position. This makes this fishing method very efficient, with a relatively small amount of fuel and other resources used to catch the tuna. But with efficiency comes a trade off – FADs also attract small tuna that is not being targeted, as well as other fish species and some species of sharks. Not all bycatch is killed; some of it is released alive at sea .

There is a higher rate of bycatch in purse seine FAD fisheries than there is in purse seine fisheries that do not use the floating objects. Statistics collected by the regional fishery management organizations that manage the tuna fisheries show that FAD fishing results in a bycatch level of about 5% compared to about 1% when FADs are not being utilized. This bycatch level is well below many other fisheries and this fish is generally retained by the fishing vessels and sold for alternative uses (fish meal, pet food, etc.)

In addition, FAD fishing results in a higher catch of small tunas, including some sensitive species like Bigeye, which are not being targeted by the vessels. This can make up 15 to 20% of the total tuna catch. While this fish is used for tuna processing, it has a lower value and the ideal situation would be to reduce the amount of small fish being caught.

We believe that the level of bycatch can be reduced substantially through utilization of best practices, modifications in fishing gear /nets and new technology. This is the approach being supported by ISSF through a three-year research program including both skipper training and at-sea research. It is contrary to the position taken by

Greenpeace that FAD fishing should be eliminated. Eliminating the use of FADs could lead to new, unknown practices that may have more serious implications for the marine environment. So instead of calling for a ban, we're working to fix what's wrong with FAD fishing while keeping what works.

ISSF is facilitating a globally coordinated at-sea research project to identify best practices, new techniques and enhanced technologies that will allow fishers to minimize the amount of non-targeted fish and other marine life captured as a result of fishing for tuna. This research is being shared with vessel crewmembers through workshops hosted in communities around the world fostering a direct dialogue that can have an immediate impact on the practices of fishers who supply the world's processors with tuna.

[7]ISSF. Status of the World Fisheries for Tuna. Rep. Washington, D.C.: ISSF, 2010. International Seafood Sustainability Foundation. Web. 11 Mar. 2011. <http://iss-foundation.org/science/reports/status-of-the-world-fisheries-for-tuna/2010-report/>

ABOUT ISSF

International Seafood Sustainability Foundation

The International Seafood Sustainability Foundation is a global coalition of scientists, the tuna industry and WWF, the world's leading conservation organization, promoting science-based initiatives for the long-term conservation and sustainable use of tuna stocks, reducing bycatch and promoting ecosystem health.