

Balancing the needs

In 2011, the delivered value of the industrial tuna catch from the waters of Pacific Island countries and territories (PICTs) was USD 3 billion.

PICTs gain up to USD 150 million a year by selling licences to foreign fishing fleets to operate in their national waters, and fleets based in PICT waters contributed over USD 300 million to the region's gross domestic product.

At the same time, urban and rural communities rely on small-scale local or “artisanal”¹ fisheries for food security and livelihoods, and there is a growing risk of conflict between the interests of these artisanal fishers and industrial operations.

Industrial tuna fishing vs artisanal fisheries

Since the early 1990s, the total industrial catch of all tropical Pacific tuna species has increased by around 60% (Fig. 1). This increase in catch has largely taken place within the exclusive economic zones (EEZs) of PICTs. The overall catch within these waters — from both commercial and artisanal fishers — has increased by 150% since 1990 (Fig. 2).

A significant proportion of the catch within Pacific Island EEZs is taken close to the shores of individual countries — less than 100 nm from the low-water mark. According to a Secretariat of the Pacific Community (SPC) study undertaken in seven PICTs, this amounts to between 5% and 25% of the total industrial catch, which brings industrial fishing operations directly into competition with artisanal operations.

Impact of industrial tuna fishing on fish stocks

In tropical waters, industrial and artisanal fishers may compete over the tuna species targeted by purse-seine vessels (skipjack and yellowfin tunas). The use of floating fish aggregating devices by industrial fleets also results in the bycatch of some species that are important to artisanal fisheries, such as mahi mahi, wahoo and rainbow runner.

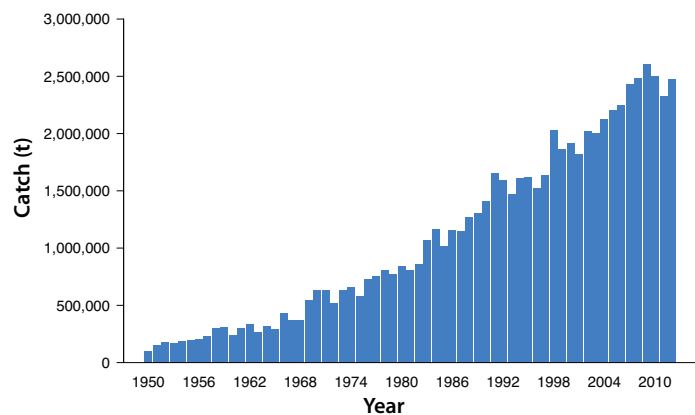


Figure 1. Long-term (1950–2012) tuna catches in the western and central Pacific Ocean .

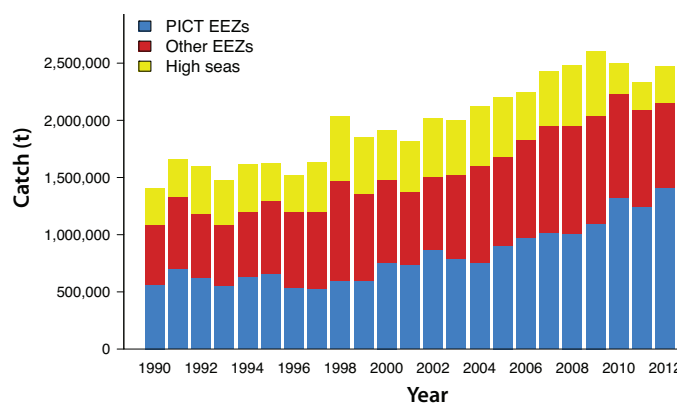


Figure 2. Recent (1990–2012) tuna catches in the western and central Pacific Ocean by area .

¹ Pacific Island governments refer to local tuna fisheries as “artisanal”, “small-scale” or “nearshore”. In this article, the terms “artisanal” and “small-scale” are used to distinguish fishing by small, semi-commercial or non-commercial vessels. In contrast, industrial fisheries are fully commercial, using vessels capable of staying at sea for weeks or months. For more information on definitions, see the Food and Agriculture Organization of the United Nations publication “International Guidelines for Securing Sustainable Small-Scale Fisheries”, available at: www.fao.org/fishery/ssf/guidelines/en.

In subtropical areas, the competition mainly involves species caught as bycatch (in particular, yellowfin tuna and wahoo) by industrial longline vessels targeting albacore tuna.

Tuna numbers in the Pacific are much lower than they were 30 years ago, primarily due to industrial fishing operations. Declines range from 8% (for skipjack tuna) to 65% (for yellowfin tuna), as seen in Figure 3.

All tuna stocks are estimated to be above the levels required to support the maximum sustainable yield and are, therefore, deemed “biologically healthy”. However, these reduced populations may not be sufficient to sustain the necessary catches and catch rates required by artisanal fisheries. Furthermore, while industrial fleets are highly mobile and can follow the remaining fish, artisanal fleets do not have this mobility, and normally operate within a range of 50 km from their base. Artisanal fleets are, therefore, vulnerable to localised depletion of fish stocks.

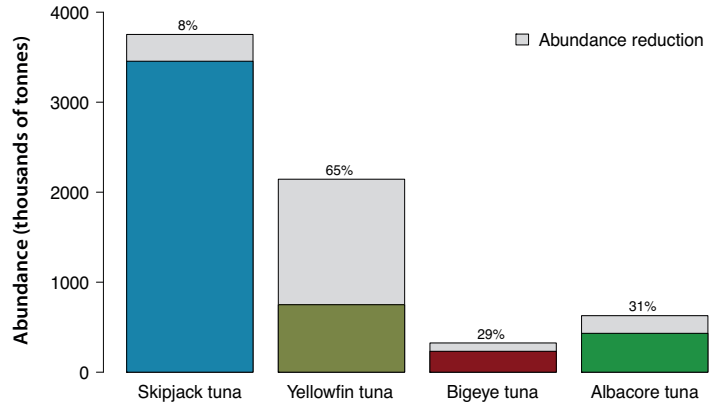


Figure 3. Reduction in abundance since 1980.

Effects of industrial fishing operations on artisanal fisheries

Industrial tuna fishing is affecting artisanal fisheries in three main ways:

1. There are fewer tuna in the water to catch.
2. More tuna are being caught than ever before by industrial fleets.
3. More of the industrial catch is being taken closer to artisanal fishing grounds than ever before.

In some countries, where industrial and artisanal fishers compete for the same fish in the same areas and at the same time, the problems are more acute.

In deciding on what actions to take, each country will need to analyse how its waters are used by industrial and artisanal fishers.

Figure 4 illustrates the increasing impact of industrial fishing on artisanal fisheries, depending on how many factors are found to be significant. If artisanal and industrial fisheries take different species in different areas or seasons, there is likely to be little impact from industrial fishing on artisanal fisheries. But, if industrial fisheries take large numbers of a species that is important to artisanal fisheries, particularly from the same area, there is a much higher risk of negative impacts on artisanal fisheries and a greater need for precautionary actions.

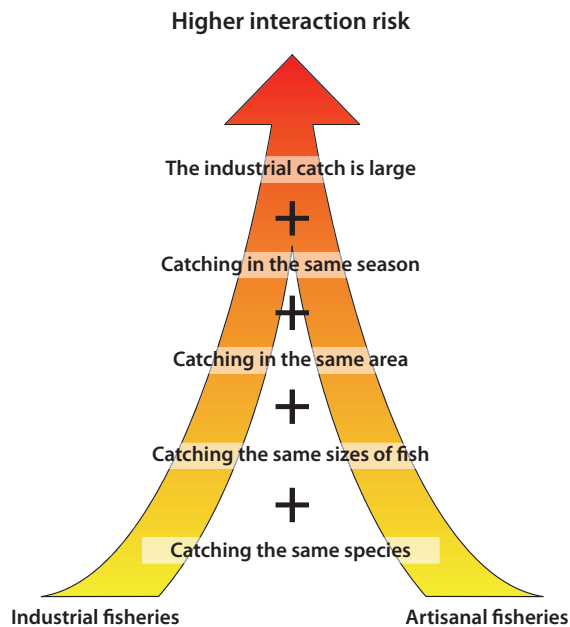


Figure 4. Important factors influencing the nature and extent of impacts from industrial fisheries on artisanal fisheries.

Possible solutions

The appropriate solution will not be the same for every PICT, and will depend on the nature and extent of the likely impacts from industrial fisheries.

Knowledge of the contributions of artisanal fisheries to food security and livelihoods is critical for identifying the best way to manage national tuna resources and to allocate them between industrial and artisanal fisheries. Such analysis needs to look at both socioeconomic and biological factors (e.g. trends in the abundance of fish and their mobility).

Managers should take the following actions, when appropriate:

- Establish industrial fishing exclusion zones to reduce direct competition between industrial and small-scale fisheries.
- Install nearshore anchored fish aggregating devices to increase the accessibility of tuna and other oceanic fish species for artisanal fisheries and to help mitigate declines in local fish populations.
- Improve national knowledge about the catch and catch rates from small-scale fisheries and, particularly, how these change over time.
- Strengthen small-scale fishers' associations, and increase their participation in national tuna management planning forums.
- Promote management measures through the Western and Central Pacific Fisheries Commission that account for the special needs of artisanal fisheries, particularly those where local communities are dependent on such fisheries for their food and livelihoods.

How SPC will help

SPC will work with each PICT to identify the extent of the challenge to its industrial and artisanal fisheries. It will also work with other relevant regional organisations to determine a set of management actions that will address the impacts of industrial fishing on artisanal fisheries.

Further reading

Harley S.J., Williams P.G., Nicol S. and Hampton J. 2013. The western and central Pacific tuna fishery: 2011 overview and status of stocks. Noumea, New Caledonia: Secretariat of the Pacific Community. www.spc.int/DigitalLibrary/Doc/FAME/Reports/Harley_13_Western_Tuna_2011_overview.pdf

SPC. 2009. Fish and food security. SPC Policy Brief 1/2008. Noumea, New Caledonia: Secretariat of the Pacific Community.

SPC. 2012. Fish aggregating devices (FADs). SPC Policy Brief 19/2012. Noumea, New Caledonia: Secretariat of the Pacific Community.

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