

The Economic Benefits of a Domestic Tuna Longline Fishery

A study carried out by the DevFish Project to guide development strategy

Why is tuna longlining important to the Pacific Islands?

Tuna Longlining is a method of commercial tuna fishing which targets large deep-swimming tunas. Because the capital cost of longliners is lower than other large commercial tunaboats, and because the highest prices are paid for fresh fish that must be landed near the fishing grounds and sent to market by airfreight, domestic and locally-based fleets have developed in most Pacific Island countries. At the same time there is a large fleet of distant-water longliners, mainly from Korea, Taiwan and China, which fish on the high seas and under access arrangements with some Pacific Island countries. Although access fees paid by these vessels are normally higher than the amount charged for licence fees of domestic vessels, it has always been believed that a domestic fleet brings much greater benefits to the local economy; but no-one has actually measured these benefits across the region, or compared different fishing and processing operations.



A Bigeye tuna caught by longlining

How can we measure economic benefits?

There are different ways of measuring the benefits of an economic activity like fishing. Some economists believe that the most important measurement is the economic rent - essentially the difference between the value of the catch and the cost of production. While this is certainly a good measure of efficiency, it does not consider the question of who benefits. A national tuna fishery could have a high economic rent, but with most of this taken offshore as profits by foreign companies. Most Pacific Islanders would consider this a poor deal for their country - they are more interested in benefits to the national economy. It is also important to use measures that can compare different fishery development approaches in different countries - a small fishing boat will not earn as much as big one, for example - and to convert values to a common currency.

Value added - *Value added is an economic term to express the difference between the value of goods and the cost of materials or supplies used in producing them [intermediate costs]. Value added is thus defined as the gross sales of a firm minus the cost of goods and services purchased from other firms.*

In this study, the key measurement used is value added, which was calculated in US dollars for each tonne of tuna. It is a measure which tells us the net economic impact of an activity like fishing. It includes not only the profit made by a fishing operation, but also the wages of the crew (an important factor in most Pacific Islands where there are not enough jobs). It can be measured not only for fishing, but also for processing and other activities after the fish is landed. In the United States, value added is measured for different fisheries at each stage of production from catching to

the final consumer, and this information is used to calculate the impact on the economy of changes in the fishery.

Five other measures were also calculated, all in US dollars per tonne of tuna:

- ✚ **Net local purchases** - this added up the value of supplies bought by fishing companies, less the cost of import of supplies from overseas;
- ✚ **Employment earnings** - the wages paid to crew and onshore workers who are resident in the country;
- ✚ **Gross Profit** - measured as earnings before interest, tax, depreciation and amortization (EBITDA);
- ✚ **Contribution to the balance of payments** - the value of export sales less the cost of imported goods used; and
- ✚ **Government revenue** from licence fees and other charges.



Value added by processing can also be worked out

How was the information collected?



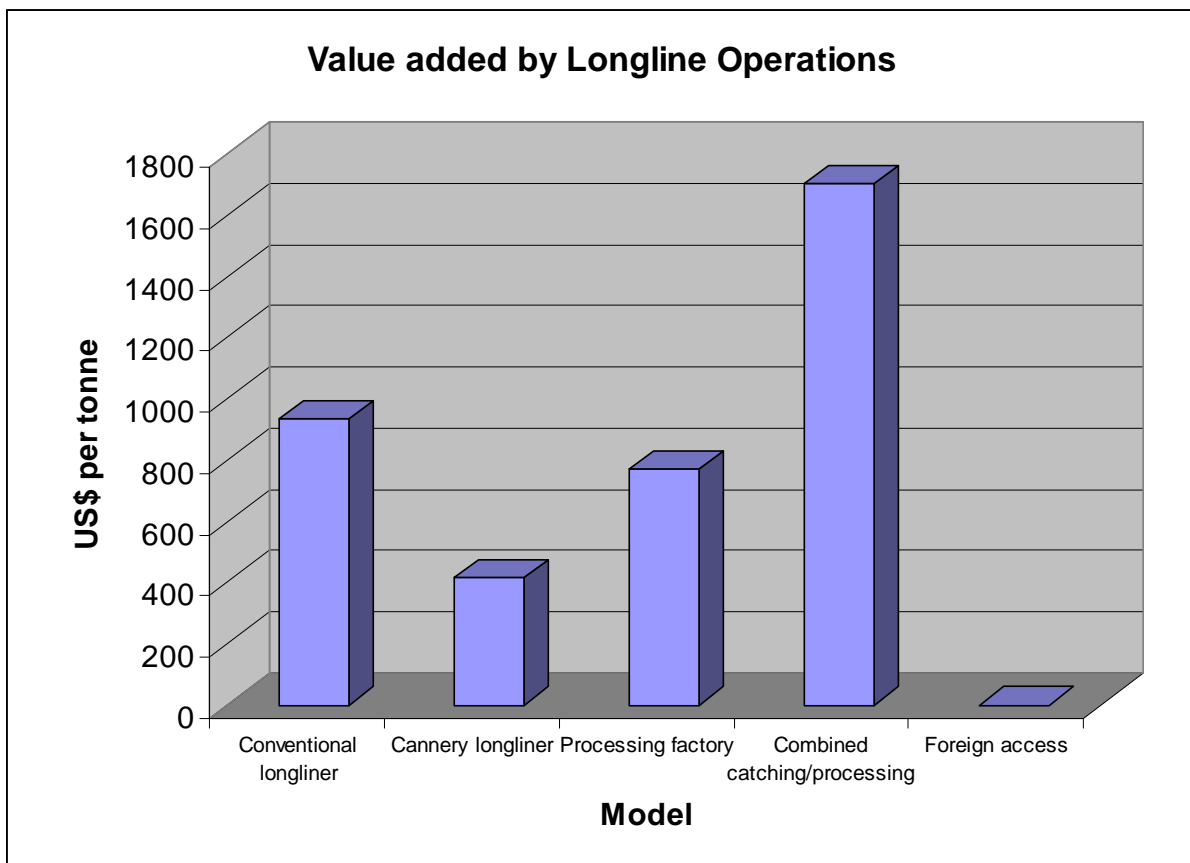
A longliner offloads in Majuro, Marshall Is.

Data was collected from tuna fishing and processing companies in four countries - Cook Islands, Fiji, Marshall Islands and Papua New Guinea. These enterprises operate some 70 longline vessels, catching around 15,000 tonnes of tuna per year, as well as most of the larger processing plants for longline caught fish in the region. Unlike some previous studies, we used actual financial results for 2005 - not data from elsewhere in the world - and there are few assumptions.

The study found that the tuna longline fishing and processing companies in the region fit into one of five models, depending on how they operate:

- ✚ A 'conventional' domestic longliner exporting most of the catch as chilled whole fish;
 - ✚ A domestic (local flag) longliner which is based at, and lands fish directly to, a foreign cannery;
 - ✚ A factory which processes tuna and by-catch for export as loins, steaks etc;
 - ✚ A combined longline fishing and processing operation; and
 - ✚ A foreign vessel fishing under an access agreement and landing its catch overseas.
- Each of these has different impacts on the local economy.





What are the benefits?

The graph above shows the value added to the national economy, per tonne of tuna, for each of the operational models. These are average values, across several companies, and typically for more than one country. The study found that the average value added by a conventional longline operation, although substantial, is only about 20% of the final value of the catch - more in some countries, less in others. Processing of the catch, however, can add value to the national economy - nearly as much as the fishing - and a combined fishing and processing operation provides the greatest benefits to the country.

The other measures are shown in the table below - again the combined fishing and processing model shows the greatest benefits for most of these. Access agreements give relatively poor returns, except in the area of Government revenue, although most domestic fishing and processing companies only reported direct payments to Government in the form of licence fees and port dues. When income tax, import duties and other charges are taken into account, revenues are somewhat higher from domestic operations. It is also interesting to note that the conventional longline model, on average, is the least profitable domestic operation. Although the export of sashimi grade fresh fish still gets the best return for a small proportion of the most valuable tuna, companies that can process the remainder of their catch are performing much better than those which rely on the export of whole fresh and frozen fish.

Model	Net local purchases	Employment earnings	Balance of payments	Gross profit	Government revenue
Longliner - conventional	525	562	1,830	365	174
Longliner - foreign cannery	0	0	416	416	13
Value added processing	602	201	1,364	602	46
Combined catching and processing	602	763	1,110	968	220
Foreign access longliner	0	0	350	n/a	350

All values in US\$ per tonne of tuna (catch or factory throughput)

Conclusions

There are four main findings of the study.

- **An integrated fishing/processing/ marketing longline sector returns the greatest benefits to the national economy.** *Most Government policies have focused on developing the catching sector. The study finds that processing of the catch provides important extra benefits. Most large-scale processing operations have involved foreign investment, and Governments may need to attract this kind of investment if they want to capture maximum economic benefits.*
- **National longline fleets were largely established when the conventional model was highly profitable - this is no longer the case.** *Although the highest returns can be made from exporting whole fresh sashimi grade tuna, the economics of the industry have changed over the last ten years or so, and it is often only profitable to export a small proportion of the total catch in this form. Companies that can process the remainder of the catch into value added products are more profitable, and many small companies that relied on the conventional model are struggling to survive.*
- **Domestic ownership of the fishing boats is not important in terms of national economic benefits.** *Although Government licensing regimes tend to favour locally owned and flagged vessels, the economic benefits depend mainly on having the boats based locally and landing their catches at a local port. Benefits can be increased by ensuring that the industry employs national, or at least resident, workers and that local companies are able to provide services and supplies.*
- **Although there is value in a regional assessment, each country is different and there is need for analysis at the national level.**

Further Information

This brochure is based on a report by Peter Philipson, which was commissioned by the DevFish Project of the Forum Fisheries Agency. A copy of the full report can be downloaded from the internet at www.ffa.int on the DevFish webpage. A printed copy can be requested from: Mr Jonathan Manieva, DevFish Project, Secretariat for the Pacific Community, P.O. Box D5, 98848- Noumea Cedex, New Caledonia.



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