

# Quantifying benefits from Pacific Island fisheries

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In July 2016, the Pacific Community (SPC) launched the book 'Fisheries in the Economies of Pacific Island Countries and Territories',<sup>2</sup> which attempts to quantify the various types of benefits produced by fisheries in the region. The document contains a fisheries-oriented discussion of macroeconomics, country information on specific topics (fisheries production, contribution to GDP, etc.), a discussion of important topics across all countries (e.g. the regional significance of access and exports of fishery products), some important features of the benefits from fisheries that have emerged from this study, and recommendations on improving the measurement of fisheries benefits and assuring the continuity of those benefits. This short article is a summary of the major features of the book.

Recent annual harvests (values and volumes) in the 22 Pacific Island countries and territories (PICTs) are given in various fishery categories for the year 2014: (1) coastal commercial fishing, (2) coastal subsistence fishing, (3) locally-based offshore fishing, (4) foreign-based offshore fishing, (5) freshwater fishing, and (6) aquaculture. Figure 1 below gives the relative values of these six categories in the region. The national volumes and values are given in Tables 1 and 2.

The coastal and offshore information given in Tables 1 and 2 is graphed in Figures 2 and 3.

The regional fish production in 2014 is estimated to be 2,013,742 t, worth USD 3,248,224,638. In comparing these figures with estimates by other studies, it is important to note carefully what the 'region' is and where the value is estimated on the value chain. The present study defines the region as the PICTs and their 200-mile zones, and the values used reflect the prices paid to the producer or (for offshore fisheries) in-zone prices.

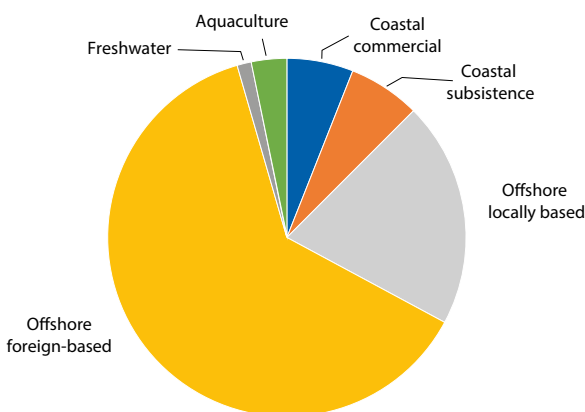


Figure 1. Relative values of the various fishery categories summed across the Pacific Islands region.

The unit price of coastal commercial fisheries across the region in 2014 (USD 4,047 per t) is greater than that of any of the other four fishery categories, and 2.5 times the unit value of offshore fisheries.

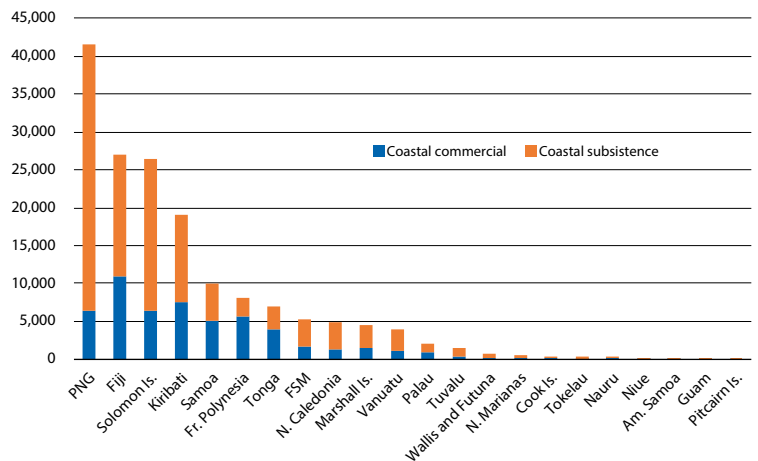


Figure 2. Volume of coastal fisheries production (tonnes).

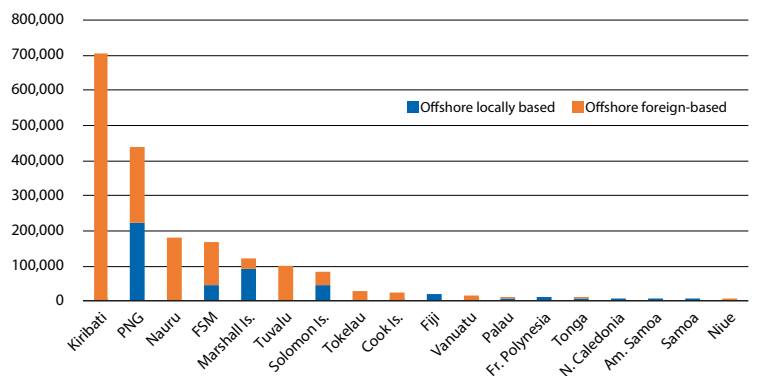


Figure 3. Volume of offshore fisheries production (tonnes).

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<sup>2</sup> <http://www.spc.int/coastfish/en/component/content/article/462-benefish-study-2016.html>

Table 1. Volume of fisheries production (tonnes) and aquaculture production (tonnes and pieces), 2014.

	Fisheries (tonnes)					Aquaculture		
	Coastal commercial	Coastal subsistence	Offshore locally based	Offshore foreign-based	Freshwater	Total	Tonnes	Pieces
Kiribati	7,600	11,400	510	701,067	0	720,577	255	8,642
Papua New Guinea	6,500	35,000	216,896	217,871	20,000	496,267	145	160,000
Nauru	163	210	0	177,315	0	177,688	0	0
FSM <sup>3</sup>	1,725	3,555	40,838	124,481	1	170,600	8	37,400
Marshall Islands	1,500	3,000	85,918	29,754	0	120,172	0	10,000
Solomon Islands	6,468	20,000	41,523	36,573	2,300	106,864	1,530	20,000
Tuvalu	300	1,135	0	96,898	2	98,335	1	0
Fiji	11,000	16,000	17,079	0	3,731	47,810	205	85,236
Tokelau	40	360	0	24,286	0	24,686	0	0
Cook Islands	150	276	194	20,342	5	20,967	12	52,000
Vanuatu	1,106	2,800	568	10,942	80	15,496	43	27,300
French Polynesia	5,666	2,350	5,390	0	100	13,506	101	8,361,500
Samoa	5,000	5,000	1,254	0	10	11,264	12	0
Tonga	3,900	3,000	1,363	1,891	1	10,155	0	1,291
Palau	865	1,250	3,987	4,017	1	10,120	22	343,800
New Caledonia	1,350	3,500	2,876	0	10	7,736	1,733	0
American Samoa	42	120	2,154	0	1	2,317	9	0
Wallis & Futuna	150	675	0	0	0	825	0	0
Niue	11	154	0	547	0	712	0	0
Northern Marianas	142	350	0	0	0	492	41	15,000
Guam	72	42	0	0	3	117	100	0
Pitcairn Islands	3	6	0	0	0	9	0	0

Table 2. Value of fisheries and aquaculture production (USD), 2014.

	Coastal commercial	Coastal subsistence	Offshore locally-based	Offshore foreign-based	Freshwater	Aquaculture	Total
Kiribati	15,459,836	16,259,016	3,606,557	1,111,106,457	0	237,506	1,146,669,373
Papua New Guinea	50,583,658	66,731,518	312,719,079	311,048,127	38,132,296	1,228,288	780,442,964
FSM <sup>3</sup>	5,000,000	8,800,000	85,342,200	228,148,080	8,000	164,800	327,463,080
Nauru	1,071,275	965,438	0	231,229,508	0	0	233,266,220
Solomon Islands	12,848,296	33,027,523	57,520,263	79,228,378	3,800,786	773,263	187,198,510
Marshall Islands	4,350,000	6,000,000	133,530,000	38,700,638	0	50,000	182,630,638
French Polynesia	31,107,594	11,466,127	28,829,104	0	487,920	89,771,222	161,661,967
Tuvalu	747,951	1,120,287	0	131,951,751	1,639	820	133,822,448
Fiji	37,878,788	29,292,929	54,364,955	0	3,741,414	1,452,307	126,730,392
Cook Islands	1,328,125	1,562,500	2,265,625	57,153,854	29,297	855,469	63,194,870
New Caledonia	9,324,366	16,916,335	13,416,896	0	48,334	18,786,304	58,492,235
Palau	3,200,000	3,300,000	31,471,000	18,555,070	10,000	285,000	56,821,070
Vanuatu	5,584,821	7,429,519	1,474,009	26,402,602	232,875	383,377	41,507,203
Tonga	18,064,516	10,053,763	4,177,419	5,058,065	3,226	15,054	37,372,043
Samoa	17,782,427	12,447,699	4,666,309	0	22,703	27,615	34,946,752
Tokelau	109,375	689,063	0	33,203,125	0	0	34,001,563
Wallis and Futuna	1,528,585	6,534,699	0	0	0	0	8,063,283
American Samoa	244,000	487,000	5,113,395	0	4,000	44,500	5,892,895
Northern Marianas	821,356	1,400,000	0	0	0	1,130,000	3,351,356
Niue	116,016	1,136,953	0	1,519,487	0	0	2,772,455
Guam	388,996	158,358	0	0	11,000	800,000	1,358,354
Pitcairn	14,063	9,375	0	0	0	0	23,438

<sup>3</sup> Federated States of Micronesia

The higher unit value of offshore locally-based production, relative to offshore foreign-based production reflects a higher proportion of locally-based longlining. The lower value of freshwater production, relative to coastal subsistence reflects the low imputed value of the production in PNG's inland fisheries.

In the present study the total production by volume from the offshore fisheries of the region, is almost nine times that of coastal fisheries. By value, it is only about 5.6 times as great – due the high unit value of coastal fisheries production.

Some of the other notable features of the over-all fisheries production of the region are as follows:

- The total production from the region in 2014 (2,013,742 t) divided by the population of the region in 2014 (10,776,937 people) equates to 187 kg of fish per person.
- Fiji and French Polynesia are the only two countries among the top producing countries whose production is not strongly tuna-oriented.
- The production from Fiji's coastal commercial fisheries is greater than that of any other PICT, even that of PNG, which has a population that is almost nine times greater.
- The value of offshore fishing in the Kiribati zone in 2014 (USD 1.1 billion) approaches the combined value of offshore fishing of all other PICTs except PNG (USD 1.3 billion).
- Three countries in an area of relatively good tuna fishing had no locally-based offshore fishery production in 2014: Nauru, Tuvalu and Tokelau. A fourth country, Kiribati, had just a tiny amount of locally-based offshore fishery production.
- In about one-third of the countries that are significantly involved in offshore fisheries, the fleet is locally-based, in another third it is a mixture of locally- and foreign-based, and in the another third it is all foreign-based.
- In only six countries of the region is aquaculture significant (i.e. production value is greater than 5% of that of coastal fisheries) – all but one of those countries are territories (Cook Islands).
- Two French Territories were responsible for over 93% of the value of all aquaculture production in the region in 2014 (Figure 4).

The study used fishery production information to estimate the contribution of fishing to gross domestic product – and then compared those estimates to estimates made by the statistics departments of the region. The official contributions of fishing to GDP are compared to the re-estimates in Figure 5.

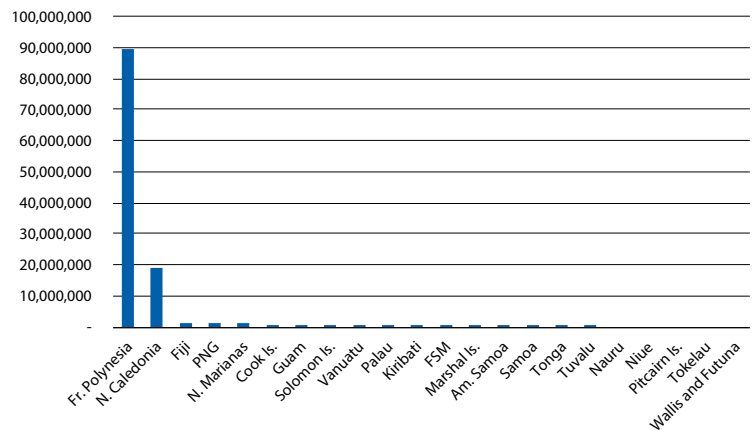


Figure 4. Value of aquaculture production in the Pacific Islands region in 2014 (USD).

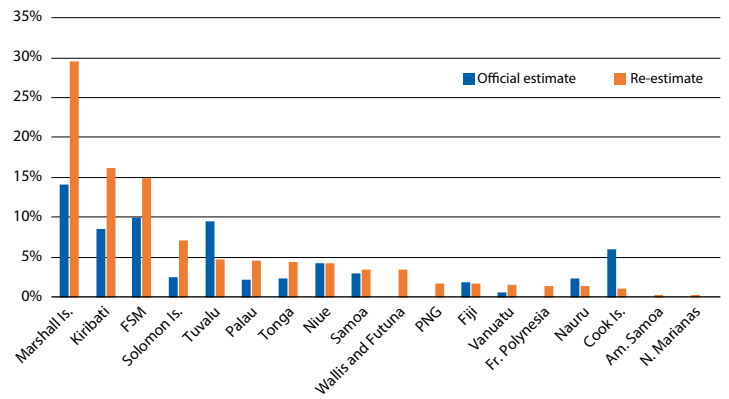


Figure 5. Official vs re-estimated fishing contributions to GDP (2014 or latest year available).

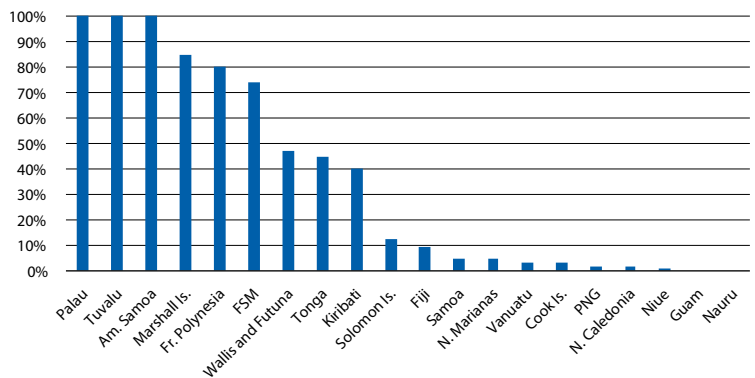


Figure 6. The relative importance of fishery exports.

Fishery exports are very important to the countries of the region. Figure 6 shows that in about half of the countries, fishery exports represent over 40% of all exports. Where they represent less than 40% of the value of national exports, several are quite large in nominal terms: PNG (USD 136 million), Fiji (USD 58 million), Solomon Islands (USD 54 million), and New Caledonia (USD 22 million).

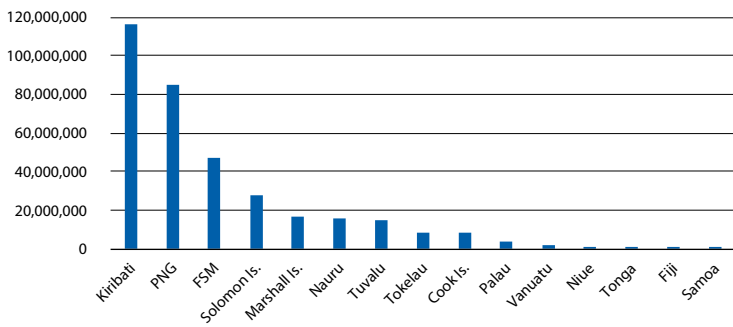


Figure 7. Access fees for foreign fishing (USD; 2014 or most recent year).

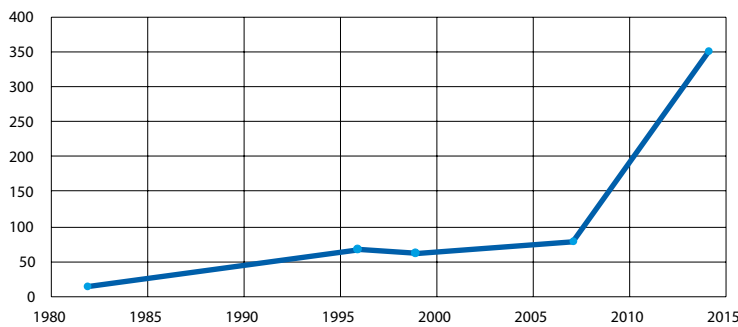


Figure 8. Change in access fees 1982–2014 (USD million).

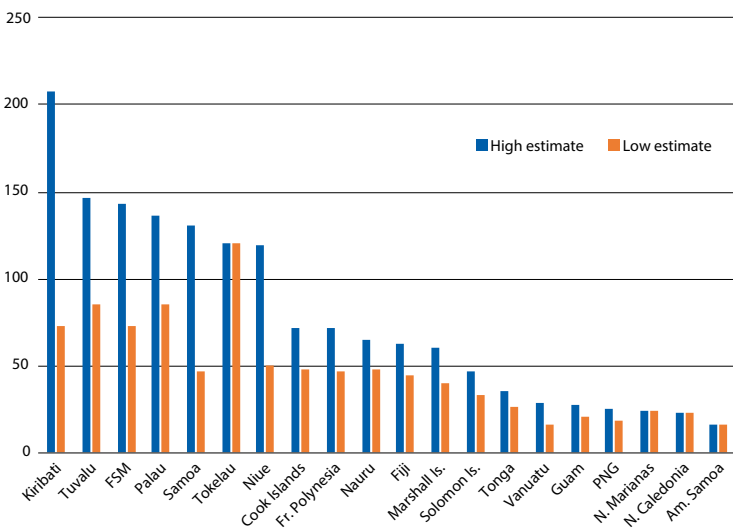


Figure 9. The range in estimates of annual per capita fish consumption estimates (kg person<sup>-1</sup> year<sup>-1</sup>).

Information is provided in the book on access fees received for foreign fishing. Figure 7 summarises access fees paid for the most recent annual period for which data is available.

Access fees have changed considerably over the years. The evolution in the level of the fees is shown in Figure 8. It should be noted that the amounts in this figure are nominal access fees (i.e. not converted to 2014 prices).

The book gives the readily available information on the consumption of fish and other fishery resources from a large number of studies. The results (minus the outliers) are summarised in Figure 9.

One of the major conclusions of the book is that in the work of the government fisheries agencies of the region, there should be a shift in the thinking, from efforts to extract more benefits from coastal fisheries (coastal fisheries development) to efforts to maintain the existing flow of benefits (coastal fisheries management). Similarly, the assistance that regional/international development partners provide to the fisheries sector at the national level needs to focus more on coastal fisheries management. The recent trends in coastal fisheries also indicate that there has already been a dietary impact due to the changes in coastal fisheries production – which further strengthens the argument for increased attention to coastal fisheries management.

## Acknowledgements

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