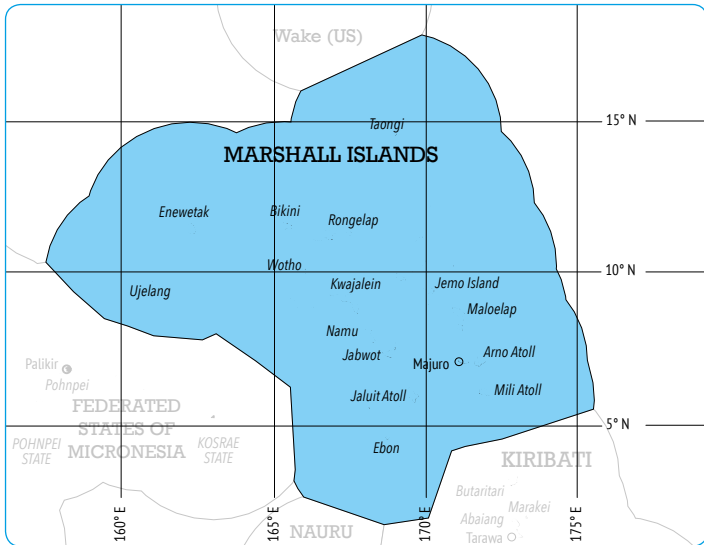


10 Marshall Islands



10.1 Volumes and Values of Fish Harvests in Marshall Islands

Coastal Commercial Catches in Marshall Islands

The following represent the major historical attempts to consolidate information on coastal fisheries production in Marshall Islands:

- Dalzell et al. (1996) used information from the FFA fisheries profiles (Smith 1992) and from a nutritional survey in 1990 (Anon. 1991) to estimate coastal commercial fisheries production for the early 1990s of 369 mt (worth US\$714,504) and subsistence production of 2,000 mt (worth US\$3,103,213).

- Gillett and Lightfoot (2001) considered the Dalzell estimate and seven other sources of information and then proposed coastal commercial fisheries production for the late 1990s of 444 mt (worth US\$973,000) and subsistence production of 2,800 mt (worth US\$3,836,000).
- Gillett (2009) considered the above two estimates as well as the following more recent information: (a) Information on the purchases of fish in the outer islands by Marshall Islands Marine Resource Authority (MIMRA), (b) The 2002 HIES, (c) OFCF fishery surveys, and (d) Data on the exports of products from coastal commercial fisheries. The study estimated that commercial fisheries production in Marshall Islands in the mid-2000s was about 950 mt, worth US\$2.9 million. The commercial was about 25% of all coastal fisheries production (i.e. the subsistence fisheries production in the countries was judged to be about 2,800 mt).

A study in 2010 (Echigo 2010) estimated the coastal fisheries production in Marshall Islands. The following data were considered: (a) 2009 catch data from four atolls at different levels of development, (b) Majuro and Arno catch data 2002–2006, (c) estimated total catch from Kwajalein Atoll, (d) MIMRA fish market buying data 2008 & 2009, and (e) population data from the 1999 census. The results of the study are given in Table 10-1.

The Echigo study did not include exported fishery products, such as aquarium fish, beche-de-mer, and trochus (F. Edwards, per. com. Sept 2015). It is assumed that the total coastal fisheries production in the country estimated by the study (about 4,500 mt) is comprised of catch used for both subsistence and commercial purposes.

The Gillett (2009) study estimated that the commercial production was about 25% of all production in the country, but the information presented below suggests that this percentage has increased in recent years.

There have been changes in Marshall Islands in the period since the above studies that are likely to have affected coastal fisheries production. Some of these are:

- Two SPC surveys of reef fish abundance in Majuro lagoon (2007 and 2011) suggest that the abundance of finfish and invertebrates has decreased (Moore et al., 2012). Other studies have commented on over-exploitation of fishery resources at locations close to urban areas (e.g. Rhodes et al. 2011, Newton et al. 2007)

Table 10-1 : Estimates of Coastal Fishery in the Echigo Study

Atoll / Island	Population	Total Catch / year (lbs)	Total Catch / year (kg)
Majuro	23,676	3,738,289	1,697,183
Kwajalein	10,902	1,032,814	468,897
Arno	2,069	1,021,318	463,678
Jaluit	1,669	199,736	90,680
Maloelap	856	106,772	48,474
Aur	537	71,532	32,475
Likiep	527	165,520	75,146
Ailinglaplap	1,959	615,282	279,338
Namu	903	283,614	128,761
Ailuk	513	179,525	81,504
Namdrik	772	270,162	122,654
Mili	1,032	361,149	163,962
Ebon	902	315,656	143,308
Wotje	866	303,058	137,588
Enewetak	853	298,508	135,523
Mejit	416	145,580	66,093
Kili	774	270,862	122,971
Ujae	440	153,978	69,906
Utirik	433	151,529	68,794
Lae	322	112,684	51,159
Lib	147	51,443	23,355
Wotho	145	50,743	23,037
Jabat	95	33,245	15,093
Rongelap	19	0	0
Bikini	13	0	0
Ujelang	0	0	0
	50,840	9,932,998	4,509,581

Source: Echigo (2010)

- Discussions with MIMRA staff knowledgeable in coastal fisheries indicate that, in recent years, there has been an increase in fish trade between the outer islands and Majuro. Church groups and local government councils are involved in this practice. In addition, one commercial company is now buying from outer islands – about 10,000 pounds of fish per trip. (F. Edwards, per. com. Sept 2015)
- MIMRA continues its efforts to bring fish from the outer islands to population centres. The 2014 MIMRA Annual Report (MIMRA 2015) indicates that two outer island fish buying schemes in 2014 purchased 62,260 kg of fish at US\$2.33 per kg (US\$145,326 total). About the same was purchased by those schemes in 2013 (MIMRA 2014). The annual purchases in the outer islands by MIMRA in 2013 and 2014 are about twice those made during the years covered by the Gillett (2009) study.
- Between the focus year of the Gillett 2009 study (2007) and the focus year of the present survey (2014) the population of the country has increased by 2.7% (SPC PRISM website data).

The above facts are generally relevant to the types of coastal commercial fisheries production that are consumed domestically. Therefore, in estimating total coastal commercial production, exports of products that are not typically consumed in Marshall Islands must be considered. The readily available information on these commodities consists of the following:

- There are currently about five or six active aquarium businesses in the country. They export mainly aquarium fish, with some cultured coral. Live rock exports ceased in 2007.
- The MIMRA 2014 annual report states: “The marine ornamental trade saw significant growth in exports during FY2014¹, with angel fish (Pomacanthidae) exports increased from about 15,000 in FY2013 to over 50,000 in FY2014” (MIMRA 2015). The MIMRA 2013 annual report states: “Pomacanthidae (angel fish) accounting for over half of the exports for the aquarium trade”.
- In 2014 there were no legal exports of beche-de-mer (but likely some leakage). There were about 9 mt of trochus exported that year. (F. Edwards, per. com. Sept. 2015)

1 A fiscal year in the Marshall Island is from 1 October to 30 September.

- Assuming that the above information is reasonably accurate, a crude estimate of the dockside value of exports of aquarium fish and trochus in 2014 is about US\$600,000.

Selectively using the information given in this section, and according moderately high credibility to the Echigo (2010) study, a crude estimate of the total coastal fisheries production in Marshall Islands in 2014 is 4,500 mt, of which the commercial fisheries component is 1,500 mt. Considering the MIMRA buying prices in the outer islands and prices paid to fishers in Majuro, the dockside value of the 2014 coastal commercial catch is about US\$4,350,000.

This represents a considerable increase from the Gillett (2009) study. Part of that increase is due to better information from the Echigo (2010) study and part can be attributed to increased commercialisation of the coastal fisheries in Marshall Islands.

Coastal Subsistence Catches

In the Gillett (2009) study it was estimated that coastal subsistence fishery catches made up 75% of all coastal catches (i.e. 25% is commercial). In the preceding section information is presented to show increased commercialisation. In view of that development, coastal subsistence catches are estimated to be about two-thirds of all coastal fisheries production, or about 3,000 mt in 2014. The value of the subsistence production (using the “farm gate” method described in Section 3-1, above) is estimated to be US\$6 million per year.

Locally Based Offshore Catches

The Marshall Island paper (MIMRA 2015), submitted in mid-2015 to the Scientific Committee of the Western and Central Pacific Fisheries Commission, states:

The Republic of Marshall Islands (RMI) continued to operate ten purse seine vessels fishing throughout the Western and Central Pacific Ocean (WCPO). The total catch by the national purse seine fleet in 2014 was 79,562 metric tonnes of which 18% was taken within the RMI EEZ. There was no national longline catch recorded as the longline vessels formerly flagged to the RMI were reflagged to the FSM in 2013.

That paper gives information on the number of Marshall Islands tuna vessels in the recent past (Table 10-2).

Table 10-2: Numbers of Marshall Islands-Flagged Fishing Vessels Active in the WCPO

GRT>	Longline				Purse seine			
	0–10	10–50	50–200	200–500	0–500	500–1,000	1,000–1,500	1500+
2010	0	0	4	0	0	0	7	3
2011	0	0	4	0	0	0	7	3
2012	0	0	4	0	0	0	7	3
2013	0	0	3	0	0	0	7	3
2014	0	0	0	0	0	0	7	3

MIMRA (2015) also contains information that shows that more than 98% of the 127 transshipments by the purse seiners were carried out in Majuro, demonstrating that the vessels were indeed based in Marshall Islands.

MIMRA (2015) states that the domestically based foreign longline fleet comprises vessels from China, Chinese Taipei and FSM. Those vessels were operated under Marshall Islands Fishing Venture Ltd., which is a subsidiary of Luen Thai. All longliners that operate in the Marshall Islands zone are based in Majuro, except for the Japanese longline vessels, which offload their catch in ports in Japan. In 2014 the locally based longliners exported 3,678 mt of bigeye, 1,428 mt of yellowfin, and 30 mt of other species. That fleet disposed locally of 153 mt of bigeye, 317 mt of yellowfin, 114 mt of albacore, and 637 mt of other species. In total the longliners landed 6,356 mt of fish. Using destination export fish prices in FFA (2015) discounted by 25% to approximate dockside prices and a flat US\$2/kg for all local sales, the dockside value of the 2014 catch by locally based longliners was about US\$39,000,000.

MIMRA (2015) gives the 2014 catch of Marshall Islands purse seine fleet as 79,562 mt. FFA (2015) gives the Thai import value of that catch as US\$113,624,676. With transshipment costs of US\$240 per mt from Majuro to Bangkok, that equates to a Majuro dockside value of about US\$94,530,000.

Foreign-Based Offshore Catches

The only foreign-based longlining in the Marshall Island zone in 2014 was by vessels from Japan (MIMRA 2015). That fleet caught a total of 451 mt of

fish in 2014, which comprised 17 mt of albacore, 278 mt of bigeye, 112 mt of yellowfin, and 44 mt of other fish. Using pricing information in FFA (2015), and discounting 15% for transport from Marshall Islands zone to Japan, the in-zone value of the 2014 Japanese longline catch is about US\$3,900,638.

MIMRA (2015) gives the total purse seine catch in Marshall Islands zone in 2014 as 43,571 mt, of which 14,268 mt was by locally based seiners (i.e. Marshall Islands-flagged), giving a foreign-based purse seine catch of 29,303 mt. Using the purse seine catch valuation methodology described above, the foreign-based purse seine catch in Marshall Islands zone in 2014 was worth about US\$34,800,000

Freshwater Catches

There are no freshwater fisheries in Marshall Islands.

Aquaculture Harvests

Hambrey Consulting (2011) states that current aquaculture production in Marshall Islands consists of a relatively steady but small production of tridacnid clams for the aquarium market, as well as small amounts of hard and soft corals for the same aquarium trade, and sporadic production of black pearls. Annual revenues to the country are in the order of a few tens of thousands of dollars, but this varies greatly between years.

With respect to actual production of giant clams:

- Hambrey Consulting (2011) states: “Production figures are potentially confusing: MIMRA annual reports and interview data produced for SPC (Ponia 2010) suggest around 30,000 and up to 90,000 clams are sold per year. However, export permit records, CITES records and, most crucially, the sole exporter’s own records, suggest the most accurate estimate would be considerably lower - in the region of 6,000–15,000 per year.”
- The CITES export database shows the giant clam exports of the country: (a) 2011: 18,540 live tridacna exported (300 originated from FSM); (b) 2012: 12,995 live tridacna exported; and (c) 2013: 11,197 live tridacna exported.
- The MIMRA 2014 annual report (MIMRA 2015) indicates that in FY2014, exports of *Tridacna derasa* increased to over 4,000 compared to about 1,500 in FY2013, while *Tridacna maxima* rose to 3,500, from about 1,000 the previous year.

- Using pricing information supplied by MIMRA, the approximately 7,500 giant clams exported in 2014 would be worth about US\$30,000 at the farm gate.

With respect to actual production of pearls:

- Hambrey Consulting (2011) states: “Pearl production can be best described as sporadic, with significant harvests over the last decade only in 2001, 2005 and 2010... The best estimate for the pearl harvest in 2010 is therefore 1,885 pearls, with a farm gate value of \$82,000”.
- MIMRA staff report that the pearl farm on Majuro has closed, and in 2014 there was only limited commercial production of pearls from the farm on Namdrik Atoll (F. Edwards, per. com. Sept 2015).

Soft and hard corals are also cultured in Marshall Islands. Production is estimated at around 1,500 pieces per year, with a value of around US\$13,000. (Hambrey Consulting 2011). The 2013 MIMRA annual report (MIMRA 2014) states that MIMRA provided export permits for over 16,000 pieces of coral during the year. The CITES database indicates that 8,485 pieces of live coral were exported in 2013, however all but 2,490 originated from Federated States of Micronesia.

For the purpose of the present study, annual aquaculture production in Marshall Islands in 2014 is estimated to be 10,000 pieces, worth US\$50,000.

Summary of Harvests

From the above sections, a crude approximation of the annual volumes and values² of the fishery and aquaculture harvests in 2007 can be made (Table 10-3).

Table 10-3: Annual Fisheries and Aquaculture Harvest in Marshall Islands, 2014

Harvest Sector	Volume (mt, and pcs where indicated)	Value (US\$)
Coastal Commercial	1,500	4,350,000
Coastal Subsistence	3,000	6,000,000
Offshore Locally based	85,918	133,530,000
Offshore Foreign-based	29,754	38,700,638
Freshwater	0	0
Aquaculture	10,000 pcs	50,000
Total	120,172 mt and 10,000 pcs	182,630,638

² A fiscal year in the Marshall Islands is from 1 October to 30 September.

The weak factual basis for the estimates of coastal commercial and coastal subsistence catches should be recognised

Figures 10-1 and 10-2 show the volumes and values of the 2014 Marshall Islands fisheries production. Aquaculture is not shown on the volumes figure, due to the use of mixed units (pieces and mt).

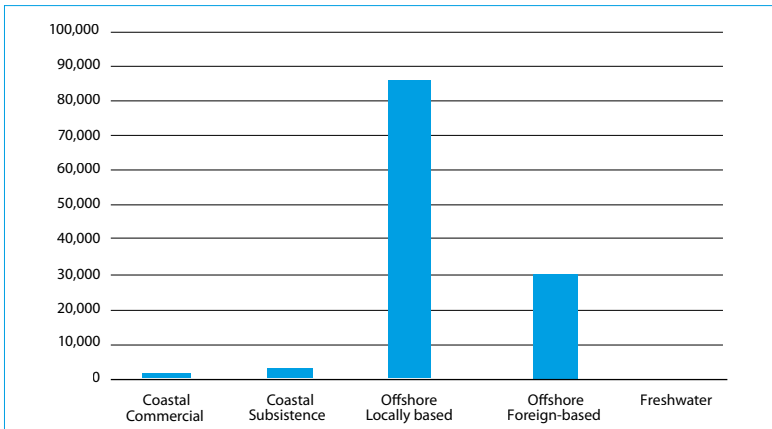


Figure 10-1: Marshall Islands Fisheries Production 2014 by Volume (mt)

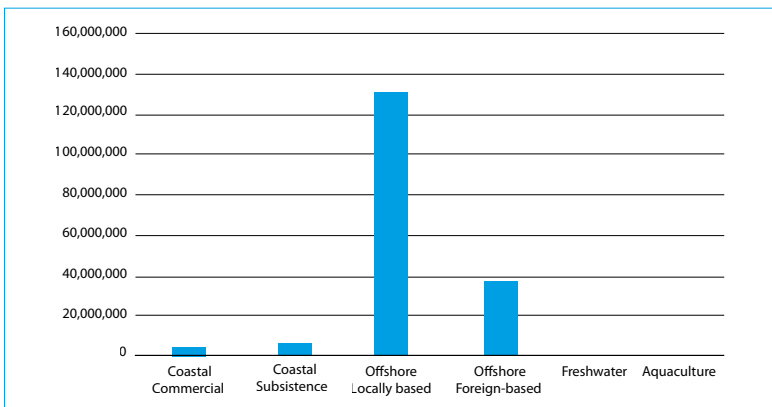


Figure 10-2: Marshall Islands Fisheries Production 2014 by Value (US\$)

Past Estimates of Fishery Production Levels by the Benefish Studies

Similar studies of the benefits to Pacific Island countries and territories from fisheries (“Benefish” studies) have been carried out in the past. Gillett and Lightfoot (2001) focused on 1999, Gillett (2009) focused on 2007, and the

present study focuses on 2014. The fishery production levels for Marshall Islands from those three studies are given in Table 10-4.³

Table 10-4: Estimates by the Benefish Studies of Annual Fisheries/Aquaculture Harvests

Harvests Sector	Estimate Year	Volume (mt, and pcs where indicated)	Nominal Value (T\$)
Coastal Commercial	2007	950	2,900,000
	2014	1,500	4,350,000
Coastal Subsistence	1999	2,800	3,836,000
	2007	2,800	4,312,000
	2014	3,000	6,000,000
Offshore Locally based	1999	0	0
	2007	63,569	81,210,390
	2014	85,918	133,530,000
Offshore Foreign-based	1999	33,217	50,000,000
	2007	12,727	19,572,712
	1999	29,754	38,700,638
Freshwater	1999	n/a	n/a
	2007	0	0
	2014	0	0
Aquaculture	1999	n/a	n/a
	2007	25,000 pcs	130,000
	2014	10,000 pcs	50,000

Source: The present study, Gillett (2009), Gillett and Lightfoot (2001)

The apparent changes in production for the three years sometimes represents a real change in production, but it can also reflect a change in the methodology for how the production is measured (hopefully an improvement). In the table above, the production levels for coastal commercial, coastal subsistence and freshwater change significantly between the years, but some of that change is due to the way in which the production was estimated. For example, the large increase in coastal commercial production between 2007 and 2014 is due to new information becoming available (i.e. the Echigo study). In contrast, changes in production figures in the table for the offshore fisheries and aquaculture (based on the availability of better quality data) are likely to reflect real changes in the amounts being harvested.

³ The earliest Benefish Study, Gillett and Lightfoot (2001), did not include aquaculture, freshwater fisheries or the non-independent territories.

10.2 Contribution of Fishing to GDP

Current Official Contribution

The national accounts of Marshall Islands are given in Graduate School (2015), from which the contribution of fishing to Marshall Islands GDP can be obtained.

Table 10-5: The Fisheries Component of the GDP of Marshall Islands (US\$ millions)

	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Fisheries component of GDP	8.9	12.2	18.5	20.8	32.2	32.0	26.3
Marshall Islands GDP	152.8	152.1	163.8	172.9	184.4	190.2	186.7
Fisheries as % of Marshall Islands GDP	5.8%	8.0%	11.3%	12.0%	17.5%	16.8%	14.1%

Source: Graduate School (2015)

The FY2014 Statistical Compendium (including the national accounts) was prepared by the Graduate School USA, Pacific Islands Training Initiative, Honolulu, Hawaii, in collaboration with the Economic Planning Policy and Statistics Office (EPPSO) of Marshall Islands. It was prepared under a contract with the United States Department of the Interior, Office of Insular Affairs. The individuals in the Graduate School responsible for the national accounts have a considerable amount of expertise and years of experience in Micronesia. For various reasons, as described in Section 31-4 of this book, those individuals have treated the fishing sector in Marshall Islands somewhat differently than, for example, the International Monetary Fund, and the descriptions in Appendices 2 and 3 of this book (hence the reference to “fisheries” rather than “fishing” in Table 10-5, above). In summary, the major changes the Graduate School has made are: (a) excluding from the fishing sector of Marshall Islands most of the current, locally based industrial fishing vessels; and (b) including in the fishing sector industrial fish processing operations (e.g. the Pan Pacific loining plant).

In calculating the fisheries component of GDP, the Graduate School used the production approach. It examined, where possible, the financial accounts of fishing/processing companies to determine the value added, rather than relying on the more simplistic value added ratios used by the present study. To some extent, for the non-industrial fishing (e.g. coastal commercial and coastal subsistence) the Graduate School used the gross value of production and the value added from the Gillett (2009) study.

Alternative Estimate of Fishing Contribution to GDP

Table 10-6, below, represents an alternative to the official method of estimating fishing contribution to GDP in Marshall Islands. It is a simplistic production approach that takes the values of five types of fishing/aquaculture activities, for which production values were determined in Section 10-1, above (summarised in Table 10-3), and determines the value added by using value added ratios (VARs) that are characteristic of the type of fishing concerned. Those VARs were determined using a knowledge of the fisheries sector, and by using specialised studies (Appendix 3).

It is not intended that the approach in Table 10-6 replace the official methodology, but rather that the results obtained serve as a comparator to gain additional information about the appropriateness and accuracy of the official methodology, and to indicate any need for its modification.

Table 10-6: Fishing Contribution to GDP in 2005/06 Using an Alternative Approach

Harvest Sector	Gross Value of Production (US\$, from Table 10-4)	VAR	Value Added (US\$)
Coastal Commercial	4,350,000	0,75	3,262,500
Coastal Subsistence	6,000,000	0.85	5,100,000
Offshore Locally based			
Longline	39,000,000	0,20	7,800,000
Purse seine	94,530,000	0,50	47,265,000
Freshwater	0	0	
Aquaculture	50,000	0,55	27,500
Total			55,092,500

Source: Production sections, above

The US\$55.1 million fishing contribution to GDP in 2014, shown in the table above is considerably greater than the US\$41.8 million estimated for 2007 in the Gillett (2009) study. It is also much greater than the official contribution of “fisheries” of US\$26.3 million for FY 2014 given in Graduate School (2015).

The major difference between Graduate School (2015) and Gillett (2009) is obviously that the official estimate includes industrial fish processing and excludes most of the operations of the locally based industrial fishing vessels. There are advantages in the respective methodologies of each study. The former is oriented towards obtaining a picture of the entire national economy – and the ups/downs of industrial tuna fishing may distort other important

changes in the economy. The present study is fisheries-oriented, and as such it is important for tracking the economic contribution of locally based fleets – something that most countries in the region (including Marshall Islands) have been promoting for many years. Also, it is important for comparison purposes that the present study uses a methodology consistent with Gillett (2009).

10.3 Exports of Fishery Production

Marshall Islands exports can be considered as essentially fisheries products, copra and coconut oil, and re-exported items. Only the first two items⁴ are considered here. Graduate School (2015) gives information on those exports in recent years (Table 10-7).

Table 10-7: Fishing Contribution to GDP in 2014 Using an Alternative Approach

	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Copra/ coconut oil	4.4	2.0	2.4	3.6	3.0	3.2	2.7
Fish	0.8	2.8	8.5	19.6	24.8	21.0	14.6
Coconuts and fish	5.2	4.8	10.9	23.2	27.8	24.2	17.3
Fish as a % of all major exports	15.4%	58.3%	78.0%	84.5%	89.2%	86.8%	84.4%

Source: Graduate School (2015)

Some additional information is available on the 2014 fishery exports:

- Pan Pacific loining plant exports: 466 mt of loins (\$2.175 million in exports in 2014), 3,061 mt of whole skipjack and yellowfin (\$4.240 million), and 241 mt of fishmeal (\$0.269 million) (Graduate School 2015).
- Exports from locally based longliners: 3,678 mt of bigeye, 1,428 mt of yellowfin, and 30 mt of other species (MIMRA 2015). Using the pricing method described in the locally based offshore section above, the dockside prices of this fish was about US\$37.4 million.
- Virtually all of the aquaculture production is exported. The aquaculture section, above, gives the 2014 aquaculture production as 10,000 pieces, worth US\$50,000 at the farm gate.
- Exports of trochus and marine aquarium ornamentals in 2014 are worth about US\$600,000 (as indicated above).

⁴ The re-export category is distorted by occasional sales of large items (e.g. used ships).

- There are significant commercial exports of reef fish. Information on 2014 exports are not available, but MIMRA (2014) gives the 2013 frozen reef fish exports as 24.3 mt – at US\$4 per kg, that is worth US\$97,200.
- An unknown, but probably significant, amount of mainly reef fish is exported informally, carried as baggage on flights to overseas destinations.

Using the items above (but without considering informal exports), the value of the 2014 fishery exports of Marshall Islands appears to be about US\$44.8 million. This equates to 94% of the major exports of Marshall Islands (fish and coconut products).

International trade statistics (www.trademap.org/tradestat), compiled by using data from both exporting and importing countries, show that US\$121.2 million of fishery products originated from Marshall Islands in 2014.

It is difficult to reconcile the above three very different estimates of the 2014 fishery exports of Marshall Islands: US\$14.6 million; US\$44.8 million; and US\$121.2 million. It is not clear what the US\$14.6 million estimate⁵ is comprised of. The reason for the difference between the US\$44.8 million and US\$121.2 million estimates could be that the latter figure is based on considering the transshipment of fish in Majuro by Marshall Islands-flagged seiners as exports of Marshall Islands.

10.4 Government Revenue from Fisheries

Access Fees for Foreign Fishing

The MIMRA annual reports contain detailed information on access fees. This is given in various categories. According to the MIMRA Executive Director and the MIMRA annual reports, the categories are defined as:

- “Fishing rights” = Access fees for pole-and-line and carriers/bunkers, and VDS administration fees, plus income from bilateral arrangements with Japan, the United States fisheries treaty, and the FSM Arrangement.
- “VDS revenue” = Access for the vessel day scheme for purse seiners.
- “License fee collections” = Administration fees: US\$5,000 for a purse seiner, US\$8,000 for a locally based foreign longliner, and US\$8,000 per trip for a Japan-based longliner.

⁵ Subsequent discussions with a member of the Graduate School team indicates this consists of \$14.6 million exports from the loining plant, and 3 associated “resident” vessels, plus \$0.8 million estimate for exports of other fishery products (G. McKinlay, per. com. November 2015).

Table 10-8: Access Fees for Foreign Fishing Activity (US\$)

	2011	2012	2013	2014
Fishing rights	2,116,371	3,071,879	2,478,875	3,383,643
VDS revenue	3,636,500	2,865,099	7,746,478	12,171,596
License fee collections	1,415,952	1,410,236	1,140,200	1,363,549
Total	7,170,834	7,349,226	11,367,566	16,920,802

Source: MIMRA (2014), MIMRA (2015)

Total revenue of the Marshall Islands government in 2014 was US\$102.9 million (Graduate School 2015). The access fees given in the table above therefore represent 16.4% of government revenue during the year.

Other Government Revenue from Fisheries

The MIMRA annual reports and unpublished data give other types of revenue received by the government from fishing activity (Table 10-9).

Table 10-9: Other Fees (Non-Access) from Fishing Activity (US\$)

	2011	2012	2013	2014
Transshipment fees	312,000	272,500	413,000	547,000
Fishing violation fines	10,000	335,000	870,000	825,000
Observer fees	370,601	397,749	261,286	561,924
Others	11,508	33,319	38,813	146,523
Total	706,120	1,040,580	1,585,112	2,082,461

Source: MIMRA (2014), MIMRA (2015)

Another form of government revenue from the fisheries sector is described in Box 10-1.

Box 10-1: Koo's Fishing Company

The major investment in the tuna fisheries sector is that of MIMRA's joint venture with Koo's Fishing Company of Taiwan. In 2006 the two entities created Marshall Islands Fishing Company to own and operate purse seine vessel(s) based in Marshall Islands. MIFCO purchased a used purse seine vessel from Koo's, with 49 percent and 51 percent shareholding by MIMRA and Koo's, respectively. MIMRA's equity purchase was funded through a loan from Koo's, to be paid back from MIMRA's share of profits. This loan to MIMRA has been completely repaid from vessel profits, according to the MIMRA Executive Director. According to the fiscal year 2013 government audit report, MIMRA netted US\$2.7 million from the arrangement, and was one of only two of Marshall Islands' state-owned enterprises to have been profitable during the year.

Source: McCoy et al. (2015)

10.5 Fisheries-Related Employment

There is no comprehensive source of fisheries-related employment in Marshall Islands. What exists is an assortment of information from the various fisheries sub-sectors in the country.

In early 2008 the Economic Policy, Planning and Statistics Office carried out an employment survey in the country (EPPSO 2008b). The survey obtained data from social security records as well as from EPPSO non-reported estimates. The results of the survey that are relevant to the fisheries sector were extracted, and appear in Table 10-10.

Table 10-10: The Results of the EPPSO Employment Survey

Number of jobs	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Fishing	546	617	735	903	1,003	281	345	281
Total jobs in country	8,598	9,116	9,544	9,946	10,070	9,578	9,918	10,149
Total earnings (US\$ millions/year)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Fishing	1,374	1,448	1,563	1,731	1,986	830	1,053	889
Total all jobs in country	16,132	17,496	17,873	16,762	16,748	16,155	17,672	18,937
Average earnings (US\$/year)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Fishing	3,088	3,091	2,768	2,464	2,558	5,508	5,415	6,207
Total all jobs in country	8,539	8,479	8,479	8,340	8,791	9,474	9,654	9,544

Source: EPPSO (2008b)

Some observations can be made about the table:

- There is likely to be a significant number of people employed in fisheries jobs that do not make social security contributions.
- The decline in “fishing” employment between 2004 and 2005 suggests that “fishing” includes non-fishing jobs (e.g. those at the tuna loining plant that closed in late 2004).
- Assuming that the estimates in the table are accurate, in 2007 fishing provided 2.8% of the jobs in the country and 4.7% of the income from jobs. The income level of fishing job-holders was only about 65% of the national average income level.

The FFA has tracked tuna-related employment in Marshall Islands. The total number of people employed (including “expat personnel and crews”) in 2012 and 2013 is shown in Table 10-11.

Table 10-11: Employment in the Large Fisheries Companies

	2012	2013
Marshall Islands Fishing Venture (MIFV)	320	288
Koo's Fishing Company (KFC)	220	220
Pan Pacific Fisheries Inc. (PPF)	170	170
Total	710	678

Source: FFA (unpublished data)

An FFA report (McCoy et al. 2015) gives additional information about employment in these three companies (Box 10-2).

Box 10-2: Some Insight into the Industrial Fisheries Employment Situation

As of February 2015 the company Marshall Islands Fishing Venture reported employing a total of 180 Marshallese, with about 90 of those involved in the processing plant and the rest as dock workers and other support staff. Of the total, 99 percent of the workers were male; only 3 women worked in the processing plant. MIFV has hired a Marshallese human resources manager to try and assist with increasing employment of Marshallese onboard MIFV vessels. This is a fairly new initiative, and there has been limited success to date.

Koo's Fishing Company has had better results in hiring Marshallese for jobs onboard their purse seiners than the longliners. This may be due to the better working conditions onboard purse seiners and also to the practice of maintaining a roster that enables crew to rotate and not work on consecutive trips.

The Pan Pacific Fisheries experience with labor at their loining plant was described by the current and past managers as involving poor attendance and poor productivity. One full shift requires 400 workers, but the plant has rarely had that many on the job, with a good attendance being 140 workers.

There have been numerous explanations offered by government officials, fisheries experts and others regarding the labor problems in RMI, many of which are also problems in other PIC processing locations. In the case of Marshall Islands the situation is exacerbated because Marshallese may enter the US and work without a visa under the Compact of Free Association. This enables both skilled and unskilled workers to easily emigrate and find jobs in the US and likely affects motivation in the workplace.

Source: McCoy et al. (2015)

The 2011 census (EPPSO 2013) provides some information on fisheries-related employment in the country. In terms of the number of jobs, the census report combines fishing with agriculture, so the number of jobs given for “Skilled Agriculture and Fisheries Workers” (860) does not provide much insight into fisheries-related employment. However, the section on household activity is more useful:

The second most popular agricultural activity is fishing. A total of 3,787 households reported fishing – that is 48.9 percent of total households in RMI. Again, fishing was primarily used for subsistence purposes – 64.1 percent of the households who went fishing claimed it was only for subsistence purposes, while 34.8 percent claimed that fishing was for both subsistence and income, and 1.1 percent reported it as a means of income.

Some further Marshall Islands fisheries-related employment facts are:

- SPC (2013) indicates that 75% of fishers are men and 25% are women.
- Rhodes et al. (2011) state that aquaculture employs about 40 Marshallese.
- Govan (2015) states that the government fisheries agency employs 90 people.

10.6 Levels of Fishery Resource Consumption

Discussions with Majuro-based nutrition and fisheries specialists indicate that there have been no general nutrition surveys in the last 15 years that involved fish consumption. Information on fish consumption must therefore come from older, general nutrition surveys, or from new studies focused on the fisheries sector.

With respect to older surveys:

- A Japan International Cooperation Agency report (JICA 1983) states that the annual consumption of fish per capita on Majuro in the early 1980s was: local fish, 22.8 kg; canned fish, 8.6 kg; imported frozen fish, 0.3 kg; indicating a total of 31.7 kg.
- Johns Hopkins (1992) gave the frequency of eating eight categories of fishery foods in 75 households.
- The Office of Planning and Statistics’ worksheet for calculating the fishing component of GDP contains information from an early 1990s household expenditure survey. From that survey the subsistence fishery contribution to fish consumption in Marshall Islands can be estimated to be about 59.0 kg per year.

- Burton et al. (1997) gave the average number of meals per week containing local fish and imported fish at Mili, Namu and Laura.
- Preston (2000), using 1995 FAO production, import, and export information, indicated the apparent per capita supply of fish in the Marshall Island was 38.9 kg per year.
- Gillett and Lightfoot (2001) reviewed the fisheries nutrition literature of Marshall Islands up to mid-2001, and made two overall observations: (a) there is considerable difference in consumption between the population centres of Majuro and Kwajalein, where 68% of the population resided in 1999, and the outer islands, where fish is relatively plentiful; and (b) leakage of fish from the transshipment operations and longline bases in Majuro is probably having a substantial effect on the supply of fish on that island.

With respect to more recent fishery-focused surveys:

- McCoy and Hart (2002) show that per capita consumption of “local marine animals” by the 1,915 people on Ailinlaplap Atoll in 2001 was 1.75 lbs per week. This equates to 42.3 kg annual per capita consumption.
- OFCF and MIMRA (2004) state: “Food supply - That first point is food supply to Majuro people. Total fish catch amount estimated [at] about 2 million lbs in whole Majuro atoll [per] year. [Considering the Majuro population of 23,000 people, this equates to 88 lbs average fish supply amount to 1 person.” (88 lbs equates to 39.9 kg.)
- At Laura on Majuro Atoll per capita consumption of fresh fish was found to be almost 90 kg/person/year (Pinca et al. 2009).
- Echigo (2010) examined the fish consumption on four outer islands in 2009. The results indicated the annual per capita fish consumption: Jaluit (45.3 kg), Likiep (138.2 kg), Namdrik (158.6 kg), and Ailuk (159.0 kg).

McCoy (2012) examined the “leakage” of fish from the major tuna transshipment ports in the Pacific Islands region. Very little leakage was found to exist in Majuro. Some fish are obtained by government officers during regular boarding, and according to agents some shore-side dock workers insist on being provided with one or two fish in addition to being paid for their labour. The lack of leakage may be attributable to the lack of a market for the relatively low-quality fish, the preference of Marshallese for reef fish, and the availability of alternative fish supplies at local stores and fish markets.

If Marshall Islands coastal fisheries production in 2014 of 4,500 mt (estimated by the present study) is divided by the 2014 population of 54,550, the result would be 82.5 kg of fish per person per year. This per capita fish consumption figure does not consider reef fish exports, non-residents in Marshall Islands that consume local fish, or domestic consumption of the leakage from tuna transshipment operations.

10.7 Exchange Rates

Marshall Islands uses the US dollar (US\$).