


FISHERY AND AQUACULTURE COUNTRY PROFILES	Food and Agriculture Organization of the United Nations	FID/CP/MHL
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NATIONAL FISHERY SECTOR OVERVIEW

MARSHALL ISLANDS

1. GENERAL GEOGRAPHIC AND ECONOMIC DATA

Area:	181 km ²
Water area:	2 131 000 km ²
Shelf area:	[no continental shelf]
Length of continental coastline:	2 106 km (length of the coast of islands)
Population (July 2007):	52 701
GDP at purchaser's value (2007):	156.1 million USD ¹
GDP per head (2007):	2 692 USD
Agricultural GDP (2007):	[not available] ²
Fisheries GDP (2007):	679 000 USD ³
	41.8 million USD ⁴

2. FISHERIES DATA

2005	Production	Imports	Exports	Total Supply	Per Caput Supply
	tonnes liveweight				kg/year
Fish for direct human consumption ⁵	56 664	485	28 901	668 ⁶	11.7
Fish for animal feed and other purposes	---	---	---	----	---

Estimated Employment (2007):	
(i) Primary sector (including aquaculture):	281 ⁷
(ii) Secondary sector:	[unavailable]
Gross value of fisheries output (2007):	108.1 million USD ⁸

¹ Source: EPPSO (2008). Statistical Tables. Economic Policy, Planning and Statistics Office, Majuro.

² GDP estimates are not available for the agriculture sector, but rather for "copra production", "subsistence", and "other". Source: EPPSO (2008). Statistical Tables. Economic Policy, Planning and Statistics Office, Majuro.

³ This is the official contribution from EPPSO (2008) – which omits subsistence fishing and small-scale commercial fishing.

⁴ Re-calculation of fishing contribution to GDP; From Gillett, R. (2009). The Contribution of Fisheries to the Economies of Pacific Island Countries and Territories. Pacific Studies Series, Asian Development Bank, Manila.

⁵ Data from FAO food balance sheet of fish and fishery products (in live weight)

⁶ Corrected to reflect actual supply.

⁷ Source: EPPSO (2008b). Preliminary Employment Statistics for Fiscal Year 2007. Economic Policy, Planning and Statistics Office, Office of the President, Majuro, Marshall Islands. Note: The cited number of jobs is likely to be a large under-estimate as it is based on social security records and therefore omits employment in small-scale commercial fishing.

Trade (2007):	
Value of fisheries imports:	[unavailable]
Value of fisheries exports:	37.3 million USD ⁹

3.1 FISHERY SECTOR STRUCTURE

3.1 Overall fishery sector

The Republic of the Marshall Islands consists of an archipelago of 29 atolls and five low coral islands. The two island chains, the eastern Ratak (Sunrise) and western Ralik (Sunset) lie 129 miles apart in a northwest to southeast orientation. Nineteen atolls and four islands are inhabited.

Fish has historically been an important component of the diet of Marshall Islands residents. Although imported food has gained importance since the 1960s, the consumption of fish remains substantial – and is critically important in the outer islands. The money obtained from licensing foreign fishing vessels to operate in the Marshall Islands zone forms a large component of government revenue. Employment related to servicing fishing vessels and processing fish has become significant in the last decade.

The country's fisheries can be placed into six categories. These categories and the associated production in 2007 are:

	Coastal Commercial	Coastal Subsistence	Offshore Locally-based	Offshore Foreign-based	Freshwater	Aquaculture	
						Tonnes	Pieces
Volume of Production (metric tonnes of pieces)	950 t	2 800 t	63 569 t	12 727 t	0 t	---	25 000 pieces
Value of production (USD)	2 900 000	4 312 000	81 210 390	19 572 712	0	130 000	

Source: Gillett (2009)

Main trends and important issues in the fisheries sector

The main trends in the fisheries sector include:

- A relatively steady number of foreign longline, purse seine, and pole-and-line vessels licensed to operate in the Marshall Islands zone during the present decade.
- A large increase in the fishing contribution to GDP and in the fishery exports of the Marshall Islands during the present decade.
- A general perception among fishery stakeholders that the quality of fisheries governance in the country has improved in the present decade.

Some of the major issues in the fisheries sector are:

- Balancing the benefits from the basing of foreign fishing vessels in Majuro with the environmental and social costs.
- Achieving the appropriate balance between promoting domestic tuna industry development and maximizing government revenue from licensing foreign tuna fishing activity.

⁸ From Gillett (2009); includes the six fishery production categories: (1) coastal commercial fishing, (2) coastal subsistence fishing, (3) locally-based offshore fishing, (4) foreign-based offshore fishing, (5) freshwater fishing, and (6) aquaculture.

⁹ Source: www.intracen.org/appl1/TradeCom/TP_TP_CL.aspx?RP=584&YR=2002

- The difficulties of competing internationally in tuna processing from a relatively high-wage location.
- Expansion of Marshallese-flagged industrial fishing fleet in such a way that it does not undermine regional efforts to reduce overall fishing effort.
- Reconciling the costs and the benefits of institutionalizing a grouping of countries within the Forum Fisheries Agency – known as the Parties to the Nauru Agreement (those countries in which most of the tuna resources are found).
- The degree of government support that should be allocated to small-scale fisheries in the outer islands and to aquaculture development.

3.2 Marine sub-sector

The marine fisheries have two very distinct components, offshore and coastal:

- Offshore fisheries are focussed on tuna and consist of longlining, purse seining, and pole-and-line fishing. These are conducted by vessels that are both local and foreign based.
- Coastal fishing is carried out for subsistence purposes and for sale in local and export markets.

3.2.1 Marine Catch profile

The annual catch from locally-based offshore fisheries has ranged in recent years between about 44 000 and 88 000 metric tonnes. Over 90% of the catch is tuna, with various species of bycatch making up the balance. In 2007 the foreign-based offshore fleet caught about 12 700 tonnes of tuna and bycatch in the Marshall Islands zone.

There is much inter-annual variation in the amount of tuna captured by purse seine gear in RMI. A climatic event known as El Niño tends to move the fishery to the east of the Marshall Islands zone.

There is considerable uncertainty concerning the levels of catches from the coastal fisheries. Available information on which estimates could be based includes records of government fish purchases in the outer islands, a household income and expenditure survey in 2002, some specialised fisheries surveys, and data on the exports of fishery products. Using these sources, the production from coastal subsistence fishing is likely to be about 2 800 tonnes and from coastal commercial fishing about 950 tonnes. The latter consist of both food items (e.g. finfish) for domestic consumption and non-food commodities (e.g. trochus, aquarium fish, coral) for export.

3.2.2 Marine landing sites

Locally-based longline vessels unload their catch in Majuro, the capital and largest urban area. Locally-based purse seine vessels transship in Majuro or a port outside the country. Some purse seined tuna is offloaded for processing in Majuro. The foreign-based offshore vessels dispose of their catch either at their home port (mainly in Asia), or is transhipped at Majuro or a port outside the country.

Most coastal commercial catches are landed at the islands which have urban areas: Majuro and Kwajalein. In addition, the government purchases fish in some of the outer islands for transport for sale in urban areas. The outer islands where such purchasing occurs include Arno, Jaluit, Maloelap, Aur, Ailinglaplap, Namu, Likiep and Ailuk.

Subsistence fishery landings occur at villages throughout the coastal areas of the country, roughly in proportion to the distribution of the population.

3.2.3. Marine fishing production means

In the offshore fisheries of the Marshall Islands:

- About three-quarters of the catch by locally-based offshore vessels is from purse seining, with the remainder from longlining. Local purse seiners are in the size range of 57 m to 71 m length over all (LOA). The longliners are mostly 26 m to 32 m LOA.

- The catch by foreign-based offshore vessels in the Marshall Islands zone is made by purse seining (in 2007 about 62% of the total by volume), pole-and-line fishing (35%), and longlining (3%). The vessel size is more diverse than the locally-based fleet. Purse seiners range from about 55 m to 90 m LOA. Longliners range from 15 m to 50 m. Pole-and-line vessels (all Japanese) range from 48 m to 65 m LOA.

Capture methods in the coastal fisheries for food fish are diverse, and include spearing, hand-lining, trolling, gill-netting, and cast netting. Paddling and sailing canoes are widely used for subsistence fishing in the outer atolls while most small-scale commercial fishing is conducted from craft of 4.5-6 m in length, powered by outboard motors in the 15 to 40 hp. range.

The two most important non-food fisheries in the country are that for aquarium fish and for trochus:

- An aquarium fishery has operated in Majuro for more than 15 years, with one principal operator and several smaller ones. Virtually all the catch is taken from the Majuro lagoon and outer reef, by both free-diving and SCUBA-diving. It has been estimated that around 3,000 fish of up to 50 species are exported each week.
- Trochus were transplanted to several atolls in the Marshall Islands from Chuuk and Palau by the Japanese in the 1930s. Enewetak atoll is responsible for most of the Marshall Islands trochus catch. Trochus is collected either by free-diving on the reef or gleaning while walking on the reef.

3.2.4 Main resources

The Marshall Islands Marine Resources Authority (MIMRA 2008)¹⁰ gives the catch composition of the offshore catch in 2007:

- The purse seine catch was about 90% skipjack, with the balance being mainly small yellowfin and bigeye.
- The longline catch was about 66% bigeye and 23% yellowfin, with the balance being mainly sharks, albacore, and miscellaneous finfish.
- The pole-and-line catch was over 99% skipjack.

The Arno Atoll Fisheries Development Project was established in 1989 to develop small-scale coastal commercial fishing in the Marshall Islands. Catches made by the project could be considered indicative of generalized small-scale commercial fishing in the country. The table shows the 15 most important finfish and 10 most important invertebrates landed by the project in recent years.

¹⁰ MIMRA (2008). Marshall Islands Tuna Fisheries. Working Paper 16, Fourth Regular Session, Scientific Committee of the Western and Central Pacific Fisheries Commission, 11-22 August 2008, Port Moresby, Papua New Guinea.

Important Species Capture by the Arno Atoll Fisheries Development Project¹¹

English Name	Scientific name	English Name	Scientific name
Finfish		Invertebrates	
Forktail rabbitfish	<i>Siganus argenteus</i>	Elongated clam	<i>Tridacna maxima</i>
Rainbow runner	<i>Elagatis bipinnulata</i>	Bear's paw clam	<i>Hippopus hippopus</i>
Humpback snapper	<i>Lutjanus gibbus</i>	Scaly clam	<i>Tridacna squamosa</i>
Parrotfish (white)	<i>Scarus longiceps</i> and <i>S.spp.</i>	Pacific asaphis	<i>Asaphis violascens</i>
Marbled grouper	<i>Epinephelus fuscoguttatus</i> , <i>E.microdon</i> and spp.	Smooth beach clam	<i>Atactodea sp.</i>
Yellowfin tuna	<i>Thunnus albacares</i>	Turban shell	<i>Turbo spp.</i>
Parrotfish (blue&green)	<i>Scarus spp.</i>	Trochus	<i>Trochus niloticus</i>
Rudderfish	<i>Kyphosus cinerascens</i> and <i>K.bigibbus</i>	Money cowries	<i>Cypraea moneta</i> and <i>C. annulus</i>
Surgeonfish (black)	<i>Acanthurus olivaceus</i> and <i>A.spp.</i>	Ellodid snail	<i>Pila luteus</i>
Dash-dot goatfish	<i>Parupeneus barberinus</i>	Octopus	<i>Octopus spp.</i>
Convict surgeonfish	<i>Acanthurus triostegus</i>		
Skipjack	<i>Katsuwonus pelamis</i>		
Orangespine unicornfish	<i>Naso lituratus</i>		
Yellowstripe goatfish	<i>Mulloidichthys vanicolensis</i>		
Bigeye emperor	<i>Monotaxis grandoculis</i>		

With respect to export-oriented coastal commercial fishing:

- In the aquarium fishery about 50 species are taken, with the most common being the flame angel fish (*Centropyge loriculus*).
- The trochus fishery is based on the single species, *Trochus niloticus*

Documentation on the catches from subsistence fishing is not readily available. However, it is likely that subsistence catches are similar to those made by small-scale commercial fishing on the Arno atoll (listed on the table above), excepting species (mainly skipjack) that are caught by motorized fishing craft trolling outside the reef. These species are less common in subsistence catches..

3.2.5 Management applied to main fisheries

Management Objectives

The Marine Resources Act Republic of the Marshall Islands has a section titled "Objectives and purposes for fisheries management and development". That section states:

The Marshall Islands Marine Resources Authority shall take into account the following objectives and purposes [in making] management decisions, including the approval of fisheries management and development plans in accordance with this

¹¹ Source: MIMRA (unpublished data)

Act: a) establish priorities for the utilisation of the fisheries resources which will provide the greatest overall benefits to the country; (b) ensure the proper conservation of the fishery resource through the prevention of overfishing and the taking of a precautionary approach toward harvesting when information and data about the fishery resource are lacking; (c) base management practices on sound management principles and the best scientific information available, to be gained through national and international research programmes; (d) minimise, to the extent practicable, fishing gear conflicts among users; and (e) develop the fisheries sector in accordance with the best interests of the country.

MIMRA (2009)¹² indicates that fishery management objectives of the Marshall Islands are “to support responsible, sustainable fisheries development; and to ensure the preservation of coastal, reef and lagoon resources primarily for nutrition, food security and small-scale sustainable income earning opportunities for the community.” With respect to the tuna fisheries, the document states that the objectives are to improve economic benefit from the fisheries sector within sustainable limits; to promote responsible and sustainable private sector led fisheries developments; and to strengthen institutional capacity to facilitate the responsible development and management of the Nation’s fisheries resources.

Measures and institutional arrangements

The management measures for the offshore fisheries of the Marshall Islands are detailed in the “The Marshall Islands Tuna Management and Development Plan”. The two main measures are: (a) a longline licence limit of 65 annual licences to attain bigeye conservation objectives, and (b) unspecified mechanisms for “Reduction of foreign fishing effort to allow for the expansion of domestic fleets”. In addition to the measures documented in the plan, there is also a sub-regional measure that is used by the Marshall Islands and other Pacific Island countries that have a significant amount of tuna purse seine activity: a limitation on purse seine effort in the form of a maximum number of purse seine fishing days in each country.

The Marshall Islands Marine Resources Authority (MIMRA) has the institutional responsibility for offshore fishery management. The Authority formulates and implements management measures as per the Marine Resources Act, Republic of the Marshall Islands.

Management measures for coastal fisheries are not well documented. Although MIMRA responsibilities include coastal fisheries management, the Authority’s current interventions in coastal fisheries are largely oriented to assistance with developing resource management institutional arrangements in the outer atolls, and with fish transporting and marketing arrangements. In practice, the authority for fisheries management is devolved to local island governments. Management measures vary considerably between islands, from virtually no measures to various types of bans. Perhaps the best known ban is the prohibition of taking trochus except during short open seasons.

According to the Marshall Islands mariculture development plan¹³, a number of outer island communities are now working actively to develop community-based fisheries management plans and establish Marine Protected Areas to protect their marine resources, fish stocks and fish habitats. Key components of these efforts are new initiatives to develop alternative sources of income.

¹² MIMRA (2009). The Marshall Islands Tuna Management and Development Plan (2009-2011). The Marshall Islands Marine Resources Authority, Majuro.

¹³ Anon (2004). Policies and Priority Actions for Sustainable Mariculture Development in the Republic of the Marshall Islands. The Marshall Islands Marine Resources Authority, Majuro.

Beger et al. (2008)¹⁴ state that marine fisheries management in the RMI was traditionally accomplished at the direction of local chiefs, but this has changed dramatically over the years. One important traditional fisheries management tool implemented by chiefs was the establishment of a "mo". A mo, like a modern marine reserve, was essentially a spatial management tool that instituted taboos against fishing in particular areas in order to conserve food resources and for the community to live in harmony with the environment. The rules and regulations for mo varied across the archipelago and would often involve rituals and chants. There was the belief that failure to observe the mo could have significant negative consequences, such as a bad storm for the homeward journey or a tragic accident for a member of the visiting party. Other methods for conserving natural resources included seasonal harvesting of different species and other restrictions.

3.2.6 Fishing communities

The concept of "fishermen communities" is not very relevant to the Marshall Islands. Those individuals that are involved in the offshore fisheries do not live in separate communities, but rather are widely dispersed around where the vessels are based, the Majuro urban area. Coastal commercial fishers are found mostly in the two urban areas, but they do not reside in specific communities. Nearly all households in coastal villages are involved in coastal fishing activities. It could therefore be stated that all non-urban communities in the Marshall Islands are 'fishing communities'.

3.3 Inland sub-sector

There are no inland fisheries in the Marshall Islands.

3.4 Recreational sub-sector

Although subsistence fishing may have a large social component and be enjoyed by the participants, there is little recreational fishing in the village as a leisure activity. In Majuro and Kwajalein there is some sportfishing (mainly offshore trolling). One hotel/retail company operates a sport charter vessel. The Marshall's Billfish Club holds an annual fishing tournament (the 2008 tournament was the 26th yearly event), and several "mini-tournaments". These competitions have prize categories for billfish, tuna, wahoo, barracuda, and bottomfish.

3.5 Aquaculture sub-sector

Anon. (2004) emphasizes the major aspects of past aquaculture in the country. These include:

- The lack of major storm activity in the RMI makes for sheltered lagoons an ideal location for mariculture, especially on the leeward side of the atoll islands.
- Most aquaculture efforts in the past have focused on marine invertebrates such as black-lip pearl oysters, giant clams, trochus, and corals
- There has been an emphasis on using locally occurring species. This means that comparatively less is known about the basic biology, culture, and ecology of these species as opposed to species such as tilapia or milkfish, which have a long history of global domestication
- All mariculture in the RMI relies heavily on wild stock at some point in the life cycle and is conducted in sensitive habitats. Thus, even for species with relatively well known culture technology such as giant clams, there is still much to learn from experimentation and broader research.

A large number of aquaculture activities have been carried out in the Marshall Islands. The table lists many of those activities.

¹⁴ Beger, M. D. Jacobson, and S. Pinca (2008). The State of Coral Reef Ecosystems of the Republic of the Marshall Islands. In: The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008. National Oceanic and Atmospheric Administration, Technical Memorandum NOS NCCOS 73.

Aquaculture Operations in the Marshall Islands

Activity	Species	Location	Time Period
Public and educational			
Kwajalein Giant Clam Mariculture	Smooth giant clam from Palau (<i>Tridacna derasa</i>)	Kwajalein	1989-??
Namdrik Black Pearl Project	Black-lip pearl oyster (<i>Pinctada margaritifera</i>)	Namdrik	1990-1995
Giant Clam Hatchery/ Outer Island Farmers Program	Fluted clam (<i>Tridacna squamosa</i>)	Ailuk, Aur, Jaluit, Likiep, Maloelap, Ujae, Wotje	1993-1995
Likiep Clam Farm	Elongated giant clam and giant clam (<i>Tridacna</i> spp., mostly <i>maxima</i> and <i>gigas</i>)	Likiep	1993-present
Arrak Experimental Pearl Oyster Hatchery	Black-lip pearl oyster (<i>Pinctada margaritifera</i>)	Majuro	2001-present
Arrak Demonstration Pearl Oyster Farm	Black-lip pearl oyster (<i>Pinctada margaritifera</i>)	Majuro	2003-present
Seaweed Cultivation	Seaweed (<i>Eucheuma cottonii</i>)	Majuro Jaluit	2002-present
Arno Clam Hatchery	Elongated giant clam (<i>Tridacna</i> spp., mostly <i>maxima</i>) and potentially rabbitfish (<i>Siganus</i> spp.)	Arno	2003-present
Commercial			
Giant Clam Aquaculture*	Giant clam (<i>Tridacna gigas</i>)	Mili	1988
Mili Giant Clam Farm	Giant clam (<i>Tridacna gigas</i> , <i>T. squamosa</i> , <i>T. gigas</i>)	Wau Island, Mili	1988-present
Marshall Islands Mariculture Farm	Giant clams (esp. <i>Tridacna maxima</i> and <i>T. crocea</i>), hard and soft coral, live rock	Wau Island, Majuro	1995-present
RRE Pearl Oyster Farm at Arno	Black-lip pearl oyster (<i>Pinctada margaritifera</i>)	Arno	1995-present
RRE Pearl Oyster Farm at Jaluit	Black-lip pearl oyster (<i>Pinctada margaritifera</i>)	Jaluit	2001-present
BPOM Pearl Oyster Farm at Arno	Black-lip pearl oyster (<i>Pinctada margaritifera</i>)	Arno (relocated from Majuro in 2002)	1998-present
Woja Pearl Oyster Hatchery	Black-lip pearl oyster (<i>Pinctada margaritifera</i>)	Majuro (requires modifications to be operational)	1998-present
Outer Island Pearl Oyster Development Project	Black-lip pearl oyster (<i>Pinctada margaritifera</i>)	Jaluit	2003-present

Source: Anon (2004)¹⁵

A recent study by the Asian Development Bank (ADB, Gillett 2009) states that in the Marshall Islands in recent years there have been two types of aquaculture with significant production, namely giant clams and black pearls:

- In 2007 there was one commercial clam farm, and two farms that operated primarily for stock enhancement purposes, but which also made some commercial sales. Giant clam production in the Marshall Islands in recent years has been 20 000 to 30 000 one-inch clams annually, with a farm-gate of about USD 3.50 apiece. A production of 25 000 clams equates to USD 87 500.

¹⁵ Anon (2004). Policies and Priority Actions for Sustainable Mariculture Development in the Republic of the Marshall Islands. The Marshall Islands Marine Resources Authority, Majuro.

- The most recent harvest of cultured black pearls occurred in early 2005 when 2 000 to 3 000 pearls were harvested, each with a farm-gate value of USD 50.
- Annual aquaculture production in the Marshall Islands in recent years is estimated to be about 25 000 pieces, worth USD 130 000.

4. POST-HARVEST USE

Offshore fishing in the Marshall Islands is export oriented. In general terms, the purse seine catch (almost all tuna) targets canning, while the longline catch targets the Japanese sashimi market. The longline bycatch from locally-based vessels is mostly sold in Majuro, with some being exported frozen or dried to Asia. The retained bycatch of foreign-based longliners is mostly sold in the home ports of those vessels.

The subsistence catch is largely for domestic consumption in the outer islands. Most of the coastal commercial food catch is for sale in the Majuro and Kwajalein urban areas. The exports from coastal commercial fisheries is primarily non-food, with the aquarium fish and coral for USA markets and the trochus for button factories in Asia and Europe. The major food fish exports are the shipments of fish taken as personal baggage on regular commercial flights to Honolulu, Hawaii.

5. FISHERY SECTOR PERFORMANCE

5.1 Economic role of fisheries in the national economy

A recent study by the Asian Development Bank attempted to quantify the fishery-related benefits received by the Marshall Islands in various categories. The study gave the available information (focused on 2007) on the contribution of fishing/fisheries to GDP, exports, government revenue, and employment. The results can be summarized as:

- Official estimates show that fiscal year 2007 fishing was responsible for 0.4% of the GDP of the Marshall Islands. A recalculation shows it to be 26.7%.
- By one estimate, exports of fishery products are about 4.3 % of all exports
- Access fees paid by foreign fishing vessels represented 5.43% of all government domestic revenue in fiscal year 2007.
- There have been no good estimates of the number of jobs related to fishing.

From the above it can be seen that fisheries make a relatively important contribution to GDP, exports and government revenue.

5.2 Demand

The annual per capita consumption of fish in the Marshall Islands, based on the 2005 FAO food balance sheet, is 11.7 kg. Various other studies have made estimates ranging between 38.9 and 59.0 kg. Considering the population of the Marshall Islands, 30 kg of fish consumption per capita translates into a 2010 demand for about 1,600 tonnes of fish.

Factors influencing the future demand for fish are a rising population, the price of fish, relative cost of fish substitutes, remittances from relatives in the USA, and payments by the government of the USA to the Marshall Islands.

5.3 Supply

The government has several strategies to increase the national fish supply. These involve facilitating private sector growth, promotion of aquaculture, and supporting the marketing of fishery products landed in the non-urban parts of the country.

Major factors affecting the local supply of fish are over-fishing near urban areas, transport links to the outer islands, marketing assistance/subsidies, and the production of non-export grades of fish by the offshore fleet.

5.4. Trade

The International Trade Centre has an export database derived from mirror data (partner countries trade data). The ITC data for the fishery exports of the Marshall Islands are given in the table.

Marshall Islands Export Data from ITC (USD thousands)

	2002	2003	2004	2005	2006
All industries	227,132	197,797	155,153	778,629	873,660
Fish, crustaceans, mollusks, aquatic invertebrates	80,491	38,223	55,798	61,765	37,342
Percentage of exports of fishery products to products from all industries	35.4%	19.3%	36.0%	7.9%	4.3%

Source: www.intracen.org/appli1/TradeCom/TP_TP_CI.aspx?RP=584&YR=2002

With exports from coastal fisheries and aquaculture amounting to less than one million dollars, the vast majority of fishery exports of the country are from the offshore fisheries.

5.5 Food security

Although the national per capita fish consumption in the Marshall Islands is not high in relation to neighbouring countries, fish is important in food security. This is because the presently abundant imported food is subject to shocks (e.g. changes in levels of payments by the government of the USA). Another reason is that the most vulnerable communities in the country are those in the outer islands – and they are highly dependent on fish for daily nutrition. For example, a study carried out in 2002 by McCoy and Hart (2002) shows that the annual per capita consumption of “local marine animals” by the 1,915 people on Ailinglaplap Atoll in 2001 was 42.3 kg. It also should be noted that the Marshall Islands atoll environment is not favourable for raising protein alternatives, such as poultry or livestock.

5.6 Employment

In early 2008 the Economic Policy, Planning and Statistics Office carried out an employment survey in the country¹⁶. The survey obtained data from Social Security records “plus EPPSO non-reported estimates”. The results showed that in 2007 there were 281 people with jobs in fishing out of a total of 10 149 jobs in the country (i.e, fishing provided 2.8% of the jobs). It should be noted, however, that there is likely to be a significant number of people employed in fisheries jobs that do not make Social Security contributions. The accuracy of “EPPSO non-reported estimates” for these people not captured by the Social Security system is unknown, but seems very low.

An Asian Development Bank study tracked the number of jobs related to tuna fisheries (fishing and post-harvest) over a seven-year period:

Employment in the Tuna Fisheries of the Marshall Islands¹⁷

	2002	2006	2008
Local Jobs on Vessels	5	0	25
Local Jobs in Shore Facilities	457	100	116
Total	462	100	141

5.7 Rural development

An important aspect of the government’s fishery development programme is to enhance the livelihoods of fishers in the more isolated parts of the country. The main strategy for

¹⁶ EPPSO (2008). Preliminary Employment Statistics for Fiscal Year 2007. Economic Policy, Planning and Statistics Office, Office of the President, Majuro, Marshall Islands.

¹⁷ Source: Gillett (2009)

doing this is through support to transporting and marketing fish from those areas in the urban areas of Majuro and Kwajalein.

The three latest Marshall Islands Marine Resources Authority annual reports (MIMRA 2008, 2007, 2006) give the amounts of fish purchased by the Authority in the outer islands. During the three-year period MIMRA purchased annually an average of 32.6 tonnes of fish for USD 60 784.

Aquaculture development is also associated with rural development. In 2003, the Marshall Islands Mariculture Working Group and Steering Committee formulated a vision for sustainable aquaculture in the country. That vision included "Outer island aquaculture production that links with operations and transportation systems in Majuro".

6. FISHERY SECTOR DEVELOPMENT

6.1 Constraints and opportunities

Some of the major constraints of the fisheries sector are:

- Difficulties associated with marketing products from the remote areas where abundance is greatest to the urban areas where the marketing opportunities are greatest.
- Fuel cost increases which have a disproportionate effect on the small-scale motorized fisheries.
- Difficulties for small-scale fishers in accessing the offshore fishery resources.
- The high mobility of skilled Marshallese labor due to easy entry into the USA
- Balancing the benefits from the basing of foreign fishing vessels in Majuro with the environmental and social costs.
- The difficulties of competing internationally in tuna processing from a relatively high-wage location.
- Expansion of Marshallese-flagged industrial fishing fleet in such a way that it does not undermine regional efforts to reduce overall fishing effort.

The opportunities in the fisheries sector include:

- Value-adding to the fishery products, for domestic consumption, sales to the military, and for export.
- Expansion of the marine aquarium fishery.
- Greater use of fish aggregating devices to promote offshore fishing by small-scale fishers.
- Greater use of management partnerships (community, government, NGO) in the management of coastal fisheries.
- Taking advantage of the relative proximity of the country to tuna markets in Japan and the USA
- Taking advantage of the relatively good infrastructure: a deepwater port, extensive fuel capacity, reliable electricity, air and shipping connections, wholesalers, hotels and limited engineering facilities.

6.2 Government and private sector policies and development strategies

An FAO project reviewed fisheries policies in the Marshall Islands¹⁸ and concluded that policies are articulated in a variety of documents, including:

- Fisheries Policy Statement of 1997;
- National Fisheries Development Plan of 1997;
- 2000 Economic Report and Statement of Development Strategies published by ADB in April 2001;
- Strategic Development Plan Framework 2003-2018 of the Vision 2018 exercise, produced in June 2001;
- Marshall Islands Fisheries Sector Master Plan produced for the Vision 2018 exercise in November 2002; and,

¹⁸ Source: Stanley, J. (2005). Fishery policy in the Marshall Islands. FAO/FishCode Review. No. 15. Food and Agriculture Organization, Rome.

- Policy on Sustainable Mariculture Development in RMI of August 2004.

RMI fisheries policy is premised on the interrelated needs to (a) improve economic benefits within sustainable limits; (b) promote responsible, private sector led developments; and (c) strengthen institutional capacities within the country for responsible fisheries development and management. The main strategy for fisheries development is through the interventions of an enhanced fisheries agency. Accordingly, the government approved a policy for the development of fisheries about a decade ago. It directed a restructuring of the Marshall Islands Marine Resource Authority to allow it become a more autonomous and self-funding authority. The objective was to release MIMRA from the standard civil service restraints that regulate most public services, and allow it to be more corporate and commercially oriented. To further release MIMRA from these "public service" bounds, its board of directors was reconstituted (Stanley 2005).

This change to MIMRA resulted in a number of changes to the fisheries development environment in the country. One of the most significant policy-promoted changes is described by ADB (2005)¹⁹:

The government embraced an approach to the fisheries sector that went well beyond licensing of foreign vessels. It encouraged spending by foreign fishing boats in the local economy and prioritized establishing onshore fish processing and other support facilities. Taking a global view of the fishing industry, the Marshall Islands formed pragmatic alliances with fishing states and worked with them to improve their financial performance. Instead of trying to displace private sector participants on a small scale, the policy environment favored working with them and attracting investments in service and support activities on a larger scale. The Government, once the driving force behind the domestic fisheries industry, accepted a facilitating and regulatory role.

The development of small-scale fisheries in the Marshall Islands is closely tied to Japanese government aid. The first rural fishing centre, with boats and gear, was established by Japan on Arno in 1989. Freezers, an ice plant and other infrastructure were added in the early 1990s. About this time, Japanese aid was also used to build a MIMRA dock and processing facility for coastal fisheries. MIMRA's Coastal Fisheries Division has an outer-islands fishing project that collects and helps market fish through two markets and seven fish bases, with assistance from Japan. (Barclay and Cartwright 2006)²⁰.

6.3 Research

The latest annual report of MIMRA indicates the following research activities²¹:

- Research on rearing of black pearl oysters at Woja
- Research on two grouper species and rabbitfish species.

Beger et al. (2008)²² described the Natural Resources Assessment Surveys (NRAS). NRAS-Conservation, a local NGO, along with the College of the Marshall Islands and MIMRA began such efforts to document the status of Marshall Island reefs. NRAS expeditions comprising a team of 9-10 international and local Marshallese scientists surveyed reef habitats at Likiep (2001), Bikini (2002), Rongelap (2002-2003), Mili (2003), Namu (2004), Majuro (2004) and Ailuk (2006). The NRAS surveys include baseline data on fish, sharks, corals, invertebrates and marine algae. Summary information is available at: <http://www.nras-conservation.org>. NRAS rapid ecological assessments are intended to serve as baseline data for managers and scientists to aid in the establishment of marine protected areas.

¹⁹ Source: ADB (2005). Pacific Progress - Asian Development Bank Success Stories in the Pacific Islands. Asian Development Bank, Manila.

²⁰ Barclay, K. and I. Cartwright (2006). Capturing Wealth from Tuna: Key Issues for Pacific Island Countries. Australian National University.

²¹ Source: MIMRA (2008) Marshall Islands Marine Resources Authority Annual Report 2006/2007. Marshall Islands Marine Resources Authority, Majuro.

²² Beger, M. D. Jacobson, and S. Pinca (2008). The State of Coral Reef Ecosystems of the Republic of the Marshall Islands. In: The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008. National Oceanic and Atmospheric Administration, Technical Memorandum NOS NCCOS 73.

Much of the research on the offshore fisheries resources is carried out in cooperation with the Oceanic Fisheries Programme of the Secretariat of the Pacific Community. This has included both national work (e.g. a tuna resource assessment of the Marshall Islands) and work in the Marshall Islands that feeds into regional tuna research (e.g. length frequency sampling of tuna in Majuro).

Fishery resource profiles prepared by the Forum Fisheries Agency²³ in 1992 summarize much of the older research carried out on 27 categories of fisheries resources (e.g. trochus, clams).

6.4 Education

Education related to fisheries in the Marshall Islands is undertaken in a variety of institutions:

- Basic education in disciplines related to fisheries is given at the College of Micronesia in Majuro.
- Academic training in biological, economic and other aspects of fisheries is given at the University of the South Pacific in Suva, Fiji.
- Other academic training related to fisheries has been received by Marshallese in tertiary institutes in Hawaii, Guam, mainland USA, and New Zealand.
- Training courses in various fisheries-related subjects are frequently organized by the Secretariat of the Pacific Community in New Caledonia and the Forum Fisheries Agency in the Solomon Islands.

6.5 Foreign aid

The Marshall Islands receives aid in the fisheries sector from a number of bilateral donors, especially Japan. The latest MIMRA annual report (MIMRA 2008) gives information on assistance from Japan.

The Overseas Fisheries Cooperation Foundation (OFCF) began the current series of fisheries projects in 1992. Assistance has ranged from repairs and restoration of fisheries related facilities to skills, technology and knowledge being transferred. Each year, during the annual OFCF Japan/Pacific Island Nations Fisheries Directors Meeting on Fisheries Cooperation, OFCF receives requests from each country for projects. After conducting field surveys and consultation with each government, the scope of the projects are developed followed by a drafting and signing of the Memorandum of Understanding and Implementation Plan. Recent projects implemented in the Marshall Islands include:

- Repair and Restoration of the main engine of F/V Lentanir and F/V Laintok;
- Replacement of the radio communication equipment including that of MIMRA;
- Advice on management and operation of F/V Jolok; and
- Advice to MIMRA regarding management and operation of the ice making facilities.

The main multilateral donors to the Marshall Islands in the fisheries sector are ADB and FAO. ADB has provided USD 6.95 million in assistance to the fisheries sector since 1990 with the most important component being strengthening MIMRA and refining fisheries policies to solidify the sector's initial gains (ADB 2005). Recent FAO support has included a fishery policy study and the provision of technical services at the Woja Black Pearl Hatchery.

The regional organisations serving Pacific Island countries, including the Forum Fisheries Agency, the Secretariat of the Pacific Community, the South Pacific Regional Environment Programme, the Forum Secretariat, and the South Pacific Applied Geoscience Commission, have also been active in supporting the Marshall Islands' fisheries sector.

²³ Source: Smith, A. (1992). Republic of the Marshall Islands: Marine Resources Profiles. Honiara: FFA Report 92/78, Forum Fisheries Agency, 90 pp, 108 p

7. FISHERY SECTOR INSTITUTIONS

The Marshall Islands Marine Resources Authority was established under the MIMRA Act 1988. MIMRA is the primary agency responsible for exploration, exploitation, regulation and management of living and non-living marine resources in the Marshall Islands. From the perspective of fisheries management in more developed countries, MIMRA may be somewhat unique in that the law requires it to be responsible for both the conservation and management of marine resources as well as their sustainable development.

MIMRA is responsible to a board of directors, of which the Minister of Resources and Development is Chairman. In 1997 it was decided that the activities of MIMRA would henceforth be funded from fishing access fee revenues and that the Authority should have more autonomy from the Public Service structure. The reconstituted board of directors is made up of:

- Minister of Resources and Development (Chair)
- Attorney General
- Secretary for Foreign Affairs
- Two fisheries sector representatives (appointed by the President)
- Director of MIMRA (*ex officio* and secretary to the board)

The Executive Director of MIMRA is responsible to the board and (according to the latest MIMRA annual report) supervises the operations of the various MIMRA divisions:

- Oceanic and Industrial Affairs
- Coastal and Community Services (with sections responsible for policy/planning/statistics, aquaculture, and repairs/maintenance)
- Corporate Services and Finance
- Fisheries and Nautical Training Center
- Legal affairs

In 2005 an FAO study reviewed MIMRA. The report of the study (Stanley 2005) made several recommendations: (i) formulation of a consolidated policy statement that embraces all fisheries jurisdictions and programmes and activities in the three subsectors of ocean fisheries, coastal fisheries and mariculture; (ii) greater emphasis on collaboration with the private sector and outer island communities in development and management of RMI marine resources; (iii) elaboration of a corporate plan for the Marshall Islands Marine Resources Authority (MIMRA); (iv) review of the Authority's existing budget layout and its possible recasting in a format that better reflects costs where incurred and outputs expected from each division; (v) adopting a cautious and transparent approach with regard to outer island income-generating activities, with attention to partnerships between communities and private business concerns and the use of incentives involving seed funding, technical assistance, transport facilitation and other support activities; (vi) action to implement operation of the MIMRA Revolving Trust Fund as soon as possible; and (vii) the need for a detailed review of capacity building and training needs for both the Authority and stakeholders in atoll communities, followed by elaboration of a long-term training and human resources development schedule as part of MIMRA's work programme.

Other Marshall islands institutions with involvement in fisheries include the Office of Environmental Policy and Planning Coordination, Environmental Protection Agency, College of the Marshall Islands, and the Marshall Islands Conservation Society.

The main private sector stakeholders in the fishing industry are:

- Pan Pacific Foods - operators of the tuna processing plant
- Marshall Is. Fishing Venture - operators of locally-based longliners
- Koo's Fishing Company - operators of Marshall Islands registered purse seiners
- Numerous small-scale commercial fishers
- The Marshall's Billfish Club - comprised of gamefishing enthusiasts

Some of the important internet links related to fisheries in the Marshall Islands are:

www.spc.int/Coastfish/Countries/Marshalls/Marshalls.htm - Information on Marshall Islands fisheries, links to other sites concerning the Marshall Islands and its fisheries, and some SPC reports on Marshall Island fisheries.

www.billfishclub.com - Information on the Marshall Island Billfish Club

www.paclii.org/databases.html - Contains the laws of the Marshall Islands, including those related to fisheries

www.yokwe.net - General Marshall Islands news, including articles related to fisheries.

8. GENERAL LEGAL FRAMEWORK

The MIMRA Act 1988 was replaced by the Marshall Islands Marine Resources Act 1997. This act deals with MIMRA affairs, fisheries conservation/management/development issues, management and development of local fisheries, trade, foreign/domestic based fishing, licensing, and MCS. The section on conservation/management/development covers the following topics:

- The responsibilities of MIMRA with respect to Conservation, management and sustainable use of the fishery resources
- Objectives and purposes for fisheries management and development
- Determining total level of fishing and allocations of fishing rights
- Determining participatory rights in fishery
- Designated fisheries - fishery management and development plans
- Conservation and management measures
- Protection of certain species
- Protection and promotion of artisanal fisheries
- The Fisheries Exclusion Zone
- Cooperation on high seas fishing for highly migratory fish stocks
- Consultation on international fisheries management
- Fishing with poisons or explosives
- Limitations on taking turtles
- Control of sponges and of black-lip mother of pearl oyster shell
- Prohibition of harvesting trochus except during open season
- Introduction of fish into Fishery Waters
- Prohibition of removal of fish from nets, traps, etc.
- Protection of fish aggregating devices, artificial reefs, mooring buoys, floats, trays
- Protection of fishing vessel or gear
- Use or possession of prohibited fishing gear
- Prohibition of driftnet fishing activities

With respect to the responsibilities of MIMRA, the act specifies that MIMRA has the exclusive power and functions to:

- Conserve, manage and sustainably develop all resources in the Fishery Waters and seabed and subsoil thereunder, in accordance with the principles and provisions in the Act and in sub-regional, regional and international instruments to which the Republic of the Marshall Islands is party;
- Establish management plans and programs to manage the resources in the Fishery Waters;
- Issue licences in accordance with the Act;
- Issue licences for the exploration and exploitation of the seabed and subsoil of the Fishery Waters;
- Negotiate and conclude access agreements and fisheries management agreements;
- Implement by regulation or otherwise as appropriate access agreements or fisheries management agreements to which the Republic of the Marshall Islands is party;

- Coordinate and manage fisheries monitoring, control and surveillance and, in consultation with the Attorney General, enforcement of the Act;
- Appoint authorized officers and observers in accordance with the Act;
- Cooperate in the conservation and management of highly migratory fish stocks as appropriate with other coastal States in the region and States fishing in the region and high seas area and participate in appropriate sub-regional, regional and international organizations or arrangements relating to fisheries;
- Participate in the planning and execution of projects, programs or other activities.

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