FISHERY AND AQUACULTURE COUNTRY PROFILE	Food and Agriculture Organization of the United Nations	FID/CP/NAU
PROFIL DE LA PÊCHE ET DE L'AQUACULTURE PAR PAYS	Organisation des Nations Unies pour l'alimentation et l'agriculture	
RESUMEN INFORMATIVO SOBRE LA PESCA Y LA ACUICULTURA POR PAÍSES	Organización de las Naciones Unidas para la Agricultura y la Alimentación	May 2010

NATIONAL FISHERY SECTOR OVERVIEW

NAURU

1. GENERAL GEOGRAPHIC AND ECONOMIC DATA

Area:	21 km²
Water area:	320 000 km²
Shelf area:	[no continental shelf]
Length of continental coastline:	24 km
Population (2007)*:	10 000
GDP at purchaser's value (2006-07 fiscal year)	21.1 million USD[1]
GDP per head (2006-07 fiscal year):	2 408 USD
Agricultural GDP (2006-07 fiscal year):	2.9 million USD[2]
Fisheries GDP (2006):	2.2 million USD[3]

*UN Population Division

2. FISHERIES DATA

2007	Production	Imports	Exports	Total Supply	Per Caput Supply
	tonnes liveweight				kg/year
Fish for direct human consumption[4]	39	0	0	39	3.9
Fish for animal feed and other purposes	0	0	0	0	0

[1]Source: http://www.spc.int/prism/country/nr/stats/Statistics/Economics/GDP/gdp_current.htm; conversion rate : 1 AUD = 0.786 USD

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[2] The agriculture contribution to GDP includes fishing.

[3] An "official" contribution of fishing to GDP has not been calculated. This is the figure that is given in ADB (2007). A recalculation shows the total fishing contribution to be USD 1.0 million: Gillett (2009). The Contribution of Fisheries to the Economies of Pacific Island Countries and Territories. Pacific Studies Series, Asian Development Bank, Manila.

[4] Data from FAO food balance sheet of fish and fishery products.

Estimated Employment (2005):	
(i) Primary sector (including aquaculture):	4 513 people[5]
(ii) Secondary sector:	Unavailable
Gross value of fisheries output (2007):	97 million USD[6]
Trade (2007):	
Value of fisheries imports:	(unavailable)
Value of fisheries exports:	Zero USD[7]

3. FISHERY SECTOR STRUCTURE

3.1 Overall fishery sector

Nauru is a single, raised coralline island with a land area of only 21 sq. km. but with an EEZ which extends over more than 431 000 sq. km. The island lies 41 km south of the equator. Nauru was formerly rich in phosphate, which has been the country's principal source of income for many years. Phosphate resources are now depleted and the country needs to develop alternative sources of income to replace mining revenues. With porous soils and uncertain rainfall, Nauru offers limited opportunity for agricultural production, and fisheries development is considered to be a major economic prospect for the future.

Although possessed of only a very shallow lagoon, much of which dries at low tide, and a narrow fringing reef, the food produced by fishing in these inshore areas is very important in the Nauru diet. Nauru's open ocean areas are frequented by an abundance of tuna and other pelagic species. The harvests of tuna in Nauru waters is substantial, but the vast majority of the catch is taken by overseas-based industrial fishing vessels. The access fees paid by those vessels form a large portion of the government revenue.

Fisheries in the waters of Nauru can be placed into six categories. These categories and the associated production in 2007 are estimated as:

	Coastal Commercial	Coastal Subsistence	Offshore Locally-Based	Offshore Foreign-Based[8]	Fresh-water	Aqua-culture
Volume of Production (metric tonnes)	200	450	0	69 236	0	8
Value of production (USD)	840 336	661 345	0	80 001 361	0	15 126

Source: Gillett (2009).

Main trends and important issues in the fisheries sector

The main trends in the fisheries sector include:

- An increasing reliance on coastal and inshore fishing for food security and employment.
- A recent increase in capacity of the government fisheries agency in fisheries management and development.

[5] CoFish (2005) gives the results of fisheries-focused socio-economic surveys carried out in Nauru in October and November 2005. Survey results indicate an average of 3.7 fishers per household; when this is extrapolated, the total number of fishers in Nauru is 4,513. Source: CoFish. 2005. Nauru Country Report: Profile and Results From In-Country Survey Work. Pacific Regional Coastal Fisheries Development Programme (Cofish), Secretariat of the Pacific Community, Noumea.

[6] 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.

[7] Currently there are no exports of fishery products from Nauru. The last export shipment of fresh tuna from the domestic longline operation was in 2001.

[8] This is the catch in the Nauru zone by vessels based outside the country. Normally, in FAO reporting on the production in world capture fisheries, this catch will be reported as the catch of the nation(s) in which the vessel(s) is (are) registered.

- After considerable variability in offshore tuna catches in the early 2000s, the catches have been fairly steady.
- An increase in enthusiasm for tuna management and development arrangements with neighboring Pacific Island countries.
- An increasing reliance by the Nauru Government on offshore fishery licensing fees.

Some of the major issues in the fisheries sector are:

- The rapid changes in inshore fishing brought about by the economic downturn (Box below).
- The capacity of Nauru Fisheries and Marine Resources Authority (NFMRA) to deliver its mandate at a time of financial stringency.
- The desire to progress from simply licensing foreign fishing vessels to a situation where the country is benefiting from catching and processing; i.e. capitalizing on the fact that the Nauru EEZ is one of the most favourable for tuna purse seining.
- 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 difficulties and expense of promoting access by small-scale fishers to the relatively large offshore tuna resources.
- The limitations of using inshore fishery resources for food security purposes.

The Changes in Inshore Fishing Due to the Economic Downturn[9]

With the economic downturn in Nauru, the drastic change in people's purchasing power, loss of paid employment, standardised salaries and working without wages have forced a change not only in lifestyle but also in social arrangements. There has been a rekindling of traditional systems, with people bartering food, helping out disadvantaged families and building up communal ties and social activities.

Fishing pressure and intensity have increased dramatically since the mid-2000s, with almost all households involved in fishing. Fishing and fisheries resources play a major role in sustaining people's livelihoods and have become the fall-back option for most people. The dynamics of fishing have totally changed, with children, women and men increasing fishing participation, targeted species changing depending on what people can get, and distribution systems changing with increased selling and sharing of seafood. Although fishing involvement has rapidly increased, the gear used has largely remained the same. The use of powered boats, night diving and other advanced gear is restricted by lack of fuel, lack of affordability, an inability to buy batteries, and so on. Outboard motors are rarely used and pelagic fishing is dominated by those with canoes (usually people from Tuvalu and Kiribati). People are generalists, collecting all invertebrate or finfish species they come across. They are starting to walk longer distances to fish or glean, and sometimes do not catch anything at all. There is a decrease in the size of catches, and also a decline in the number of catches. People are moving into harvesting and consuming species not harvested before (e.g. certain types of bêche-de-mer and sea urchin).

3.2 Marine sub-sector

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

- There is no domestic fleet operating in offshore area. Offshore fisheries focussed on tuna consist entirely of purse seining by foreign based vessels.
- Coastal fishing is carried out for subsistence purposes and for sale in local markets.

[9] Vunisea, A. (2007). Fishing to Sustain Livelihoods in Nauru. Women in Fisheries Information Bulletin #16, Secretariat of the Pacific Community, Noumea.

3.2.1 Marine Catch profile

The annual catch from offshore fisheries has range in recent years between about 20 000 and 67 000 metric tonnes. Over 90% of the catch is tuna, with various non-tuna species making up the balance. Total catch made by foreign-based vessels using purse seine gear within the Nauru EEZ is estimated as:

Volume and Values of Catches by Offshore Fishing in the Nauru EEZ[10]

	2003	2004	2005	2006	2007
Volume total catch (tonnes)	20 387	70 660	53 542	60 172	69 236
Value total catch (USD)	13 625 102	54 680 868	43 047 300	50 749 735	80 001 361

There is much inter-annual variation in the amount of tuna captured in the Nauru EEZ. A climatic event known as El Niño tends to shift the fishery toward the eastern part of the Nauru EEZ.

There have been three substantive attempts to estimate coastal fisheries production in Nauru in recent years:

- Dalzell et al. (1996) gave the following catch information: Subsistence fisheries - 98 tonnes; Commercial fisheries - 279 tonnes.
- Gillett and Lightfoot (2001) considered the surveys above and other sources of information to produce an estimate of coastal commercial fisheries production of 315 tonnes and an estimate of coastal subsistence production of 110 tonnes.
- Gillett (2009) considered the two surveys above and recent changes in Nauru (economy, population) and estimated of coastal commercial fisheries production to be 200 tonnes and that for coastal subsistence production to be 450 tonnes.

3.2.2 Marine landing sites

Catches from the offshore fishery are not offloaded in Nauru. Depending on the flag of the vessel caught tunas are either transshipped for transport to a cannery (seiners from Taiwan and Korea), delivered directly to Pago Pago (US vessels), or delivered to a port in Japan (Japanese vessels). Some vessels may make direct deliveries to canneries in the Philippines

The catch obtained from fishing in shallow inshore waters is landed all around Nauru - wherever the fishers swim, wade, or walk ashore. Most of the catch from fishing further offshore from canoe and skiffs is landed at a few man-made channels through the fringing reef. Grabab Channel at the southwest of the island is used during the prevailing easterly winds, while Anibare Bay is used during winds from the northwest.

3.2.3 Marine fishing production means

In recent years the offshore catches have been made entirely by purse seine gear. In 2008 vessels from ten countries were licensed to fish in the Nauru zone:

[10] Source: FFA (2008) with modifications by consultant; FFA (2008). The Value of WCPFC Tuna Fisheries. Unpublished report, Forum Fisheries Agency, Honiara.

Fishing Vessels Licensed to Nauru in 2008[11]

Country	Total number of vessels	Vessel Tonnage		
		501-1000 GRT	1001-1500 GRT	1500+ GRT
Japan	33	1	30	2
Korea	27	11	13	3
New Zealand	3	0	1	2
Taiwan PC	33	18	16	1
USA	9	2	18	16
China	10	5	5	2
Vanuatu	6	0	0	3
Federated States of Micronesia	3	1	0	2
Kiribati	1	0	1	0
Marshall Islands	5	0	5	0
Total	130	38	89	31

Fishing methods used in the coastal and inshore fisheries are quite diverse. These are given in the table.

Coastal and Inshore Fishing Methods[12]

Fishing Area	Fishing methods	Comment
Reef flat, reef crest and surf zone	Gleaning, seine and cast nets, spearing, traditional trapping, line fishing at high tide, for food and bait,	Relatively small area overall available, less than 300ha. Some traditional association with adjacent communities in districts
Reef front and nearshore slope to 25-30m	Seining, bottom and water column hand line fishing from canoes and skiffs, diving and spearing, with or without SCUBA.	100-200 ha. Very limited area under high and increasing pressure, with access from both shore-based and boat-based activities.
Reef slope and deep water to 400m	Drop line, other bottom fishing methods and mid-water hand lining, from canoes, skiffs and larger outboard vessels in deeper water.	Relatively limited area, requires more expensive gear for fishing in deep water
Nearshore pelagic waters within sight of island, and adjacent to anchored FADs and mooring buoys	Trolling, pole and mini-long-lining, drop stone and similar methods for deeper pelagics, traditionally netting for flying fish and baitfish	Large mooring buoys off Ewo Cantilevers have provided inshore trolling and line fishing; other offshore and inshore FAD deployment since early 1980s

3.2.4 Main resources

According to NFMRA (2009), in 2008, the offshore tuna catch taken by purse seiners consisted of 80% skipjack, 18% yellowfin, and 2% bigeye. Other species including blue marlin, wahoo, and various sharks is characteristically about 5% of the entire catch.

FFA (2007) summarizes the coastal and inshore species by fishing area:

The Main Species by Coastal/Inshore Fishing Area

Fishing Area	Species
Reef flat, reef crest and surf zone	Molluscs, crustaceans, some beche de mer, eels, octopus and small fish mullet, surgeonfish and scarids and other species netted in surf zone, casting and bait fishing from reef edge.,

[11] Source: NFMRA (2009). Nauru – Annual Report to the Commission. WCPFC-SC5-AR/CCM-13, Nauru Fisheries and Marine Resources Authority.

[12] Source FFA (2007). Nauru Fisheries and Marine Resources Authority, Coastal Fisheries Department. Working Paper 3, Institutional Strengthening Project, Forum Fisheries Agency, Honiara.

Reef front and nearshore slope to 25-30m	Wide range of smaller demersal and epibenthic species as – scarids, acanthurids, carangids, shallow-water serranids, lutjanids and lethrinids and ranging reef-associated pelagics
Reef slope and deep water to 400m;	Deep water snappers, lutjanids, carangids and some scombrids, deeper-water serranids, balistids, some sharks
Nearshore pelagic waters within sight of island, and adjacent to anchored FADs and mooring buoys	Rainbow runners, some tunas, wahoo, mid-water balistids, barracuda, some sharks

3.2.5 Management applied to main marine fisheries

Nauru is a member of the Western and Central Pacific Fisheries Commission that was established by the Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. The Convention entered into force in June 2004.

In the early 2000s a National Tuna Fishery Strategy was prepared. In 2005 Nauru National Tuna Management and Development Plan was prepared. Neither document was officially adopted, and therefore they cannot be relied upon to provide accurate information on national management arrangements. Nevertheless some insight can be obtained by examining the management objectives in the Plan:

- Strengthening the exercise of sovereign rights by Nauru over the tuna resource;
- Increasing the economic gains received by Nauru from the exercise of its rights over the tuna resource;
- Ensuring effective participation by Nauru in regional tuna management activities;
- Minimising any adverse impacts of tuna fishing and related activities on non-tuna species and the marine environment;
- Eliminating illegal fishing activity in the fisheries waters of Nauru;
- Protecting the interests of small scale tuna fishers, noting their contribution to food security;
- Improving the nutritional standards of the Nauruan people through increased availability of fish, Including tuna and bycatch species taken during tuna fishing, as a source of food in Nauru

From an historical perspective, most national offshore fishery management efforts have been focused on the objective of generating revenue for the Nauru Government through licensing foreign fishing vessels. These efforts have been quite successful: access fees represented 20.3 21.0% of government revenue in fiscal year 2006/07 and 17.2% in 2007/08 (Gillett 2009).

There has been a large amount of regional cooperation in the management of offshore fisheries. This has been exercised primarily through the Parties to the Nauru Agreement (PNA) – see box.

The PNA[13]

In February 1982 the Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest (hereafter referred to as the Nauru Agreement) was opened for signature. The Nauru Agreement had been negotiated by seven Pacific island states –Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea and Solomon Islands. This group of countries (later joined by Tuvalu) is known collectively as the Parties to the Nauru Agreement (PNA).

The conclusion of the Nauru Agreement marked the beginning of a new era in Pacific island cooperation in the management of the region's tuna stocks. It was an important milestone in the exercise of coastal state sovereign rights over their 200-mile EEZs. The PNA group accounts for much of the tuna catch in the Pacific island region. In 1999, it produced 98 percent of the tuna catch taken from the EEZs of Pacific island Forum Fisheries Agency members; 70 per cent came from three PNA members: PNG, FSM and

[13] Source: Tarte, S. (2002). The Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest - A Review of the Agreement and an Analysis of its Future Directions. A Consultancy Report prepared for the Forum Fisheries Agency and the Parties to the Nauru Agreement.

Kiribati. The group also accounted for 94 per cent of the access fees paid to the FFA Pacific island states. By controlling access to these fishing grounds, the PNA group collectively wields enormous influence and power.

The PNA has implemented a number of management arrangements. These include a set of non-negotiable minimum terms and conditions for foreign fishing vessel access and a limit on the number of purse seine vessels operating in the region under bilateral licensing arrangements. Currently the PNA countries (including Nauru) are implementing a limitation on purse seine effort based on the number of vessel days. According to FFA (2007), under the vessel day scheme, PNA parties are to be assigned a Party Allowable Effort, which is based 50% on the distribution of the relative biomass of skipjack and yellowfin tuna, calculated as the average over a 10-year period, and 50% on the average number of vessel days/year fished in the waters of the Parties, calculated over a seven-year period.

With respect to coastal and inshore fisheries management, there is little government intervention in the inshore fisheries (CoFish 2005)[14]. This situation is summarized in the box below. Because of the declining state of resources coupled with the increasing overdependence of the population on reef and inshore species, there is an urgent need to strengthen management capabilities. FFA (2007) states that good progress has been made in consulting communities and development of draft community fisheries legislation as the basis for community-based management for coastal fisheries.

The Lack of Inshore Fisheries Management[15]

At the moment there is no form of fisheries management, although at the district level people have started to adopt mechanisms that could address the issues, and there are continuing attempts to put in place marine-protected areas. Nauru's open-access tenureship means that everyone is free to fish anywhere on the island. This is very different from other Pacific Island countries. Because of the lack of traditional authority, the protocols seen in other countries are not practised in Nauru. There are no customary regulations, district laws or unwritten understandings on fishing activities, such as size limits, quotas, gear restrictions, use of scuba, or imports.

The Nauru Fisheries and Marine Resource Management Authority (NFMRA) provides the institutional framework for fisheries management in the country. NFMRA is a statutory corporation under the Fisheries Act 1997 that has the responsibility of overseeing, managing and developing the country's natural marine resources and environment. The role of NFMRA is covered in more detail in a section below.

3.2.6 Fishermen Communities

The concept of "fishermen communities" has limited applicability to Nauru. CoFish (2005) indicates that 97% of the sampled households on Nauru were found to be engaged in fishing activities. In some respect, all of Nauru could be considered as one fishing community.

3.3 Inland sub-sector

According to NFMRA (2005)[16], there are four depressions on the Nauru plateau, the most significant one forming Buada Lagoon which is 30 000 m². The other water bodies, known as ponds, are on the fringing coast or just a few metres from the base of the escarpment. They range from about 40 m² to about 10 000 m², either manufactured or naturally occurring. Anabar pond, at 10 000 m², is the most significant. The ponds have become infested with tilapia which is not popular as a food item. In many studies of the fisheries of Nauru, any harvesting from these brackishwater bodies is considered to be aquaculture.

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[14] CoFish (2005). Nauru Country Report: Profile and Results From In-Country Survey Work. Pacific Regional Coastal Fisheries Development Programme (Cofish), Secretariat of the Pacific Community, Noumea.

[15] Source: Vunisea (2007)

[16] NFMRA (2005). Nauru Aquaculture Development Plan, 2005–2010. Nauru Fisheries & Marine Resources Authority.

3.4 Recreational sub-sector

Chapman (2004)[17] reports that around 50 vessels are capable of game fishing or sports fishing on the island. The Nauru Fishermen's club meets once or twice a year to discuss game fishing and sports fishing issues. Regular fishing tournaments are organized at Easter and Constitution Day, with other ad hoc competitions organized privately.

Since the time of Chapman (2004) the economy of Nauru has suffered shocks and recreational activities have been curtailed. Nevertheless, many Nauruan consider subsistence fishing as a pleasurable social activity which has value beyond just food collection.

3.5 Aquaculture sub-sector

NFMRA (2005) discusses the fall and rise of aquaculture in Nauru. Traditionally, juvenile milkfish were collected on the intertidal reef and reared in brackish ponds. The most important areas for farming were Buada Lagoon and, to a lesser extent, the Anabar pond. Farming was divided among families, with walls and fences, and the people had an intricate social fabric intertwined with milkfish culture. The Mozambique tilapia (*Oreochromis mossambicus*) was introduced around 1961, with assistance from the South Pacific Commission, but it was not accepted as a food source mainly because of its small size and poor flavor. Tilapia eventually infested all the milkfish ponds and competed for food. The result was that milkfish harvested from infested ponds took longer to grow to an edible size and this caused many farmers to abandon their traditional practice of raising milkfish. In 2000, the Buada Lagoon Owners Association introduced 10 000 milkfish fry from Kiribati into Buada Lagoon, reaping 5 000 adult fish some months later.

Currently there are several milkfish grow-out ponds around Nauru. These are backyard/subsistence operations, but there is no good estimate of production. The last estimate was in 2006 when it was thought that the annual milkfish production was about 8 tonnes, providing livelihoods for 30 people. (T. Adams, personal comm., November 2008).

4. POST-HARVEST USE

4.1 Fish utilization

The catch from the various foreign flagged purse seine fleets operating in Nauru is almost all for canning, but the mechanisms for getting the catch to the canneries shows considerable variation:

- Japanese purse seiners return to Japanese ports to offload the catch.
- US purse seiners offload their catch at the canneries in Pago Pago, American Samoa, and do not transship often.
- Taiwanese, Korean, and Chinese seiners (or vessels controlled by interests from these countries) usually transship their catch. Because the lack of a suitable harbour in Nauru and a ban on transshipping in the zones of Pacific Island countries[18], this transshipment usually occurs in a port in a neighboring country – often Pohnpei in the Federated States of Micronesia or Majuro in the Marshall Islands.

The production from the coastal and inshore fisheries and aquaculture is for domestic consumption. CoFish (2005) states that local marketing of finfish is very rare and marketing of invertebrates is non-existent (apart from lobsters). The reliance on marine products for basic food needs and the lack of transportation and outlets for marketing contribute to this. Almost all finfish catch is consumed or given to relatives, and only a small proportion of catches is reported sold. Most of the sales are from informal roadside

[17] Chapman, L. (2004). Nearshore Domestic Fisheries Development in Pacific Island Countries and Territories. Secretariat of the Pacific Community, Noumea.
[18] On June 15, 1993, FFA member countries introduced a ban on fish transshipment at sea.

markets. The Nauru Fisheries Corporation (the commercial arm of NFMRA) has operated a fish market, but it is currently closed.

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 Nauru. The study gave the available information on the contribution of fishing/fisheries to GDP, exports, government revenue, and employment. The results can be summarized as:

- Official estimates show that fishing in fiscal year 2006 was responsible for 10.2 % of the GDP of Nauru. A recalculation using a different methodology shows it was 4.6 % in 2006.
- Currently there are no exports of fishery products from Nauru.
- Access fees paid by foreign fishing vessels represented 21.0% of government revenue in 2006/07 and 17.2% in 2007/08.
- 97% of the sampled households on Nauru were found to be engaged in fishing activities.

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

5.2 Demand

The annual per capita consumption of fish in Nauru, based on the 2007 FAO Food Balance Sheet, is 3.9 kg. Various other studies have made estimates ranging between 46.7 and 55.8 kg. Considering Nauru's population, 50 kg of fish consumption per capita translates into a 2010 demand for 532 tonnes of fish.

Factors influencing the future demand for fish are the condition of the Nauru economy, any increase in price of fish (over-exploitation of inshore areas, fuel cost increases, changes in the population of the island, and relative cost of fish substitutes.

5.3 Supply

The government has several strategies to increase the national fish supply. These involve promoting offshore fish aggregation devices, canoe building, fish marketing, and aquaculture. There are also efforts to promote community-based management of fishery resources to mitigate over-exploitation.

Major factors affecting the local supply of fish are the limited livelihood and food security alternatives to fishing during the present economic downturn – coupled with over-exploitation of inshore fishery resources.

5.4 Trade

Currently there are no exports of fishery products from Nauru. The last export shipment of fresh tuna from the domestic longline operation was in 2001, and only seven shipments were ever made.

5.5 Food security

The FAO Food Balance Sheets show that in 2007 fish contributed an average of 6.0% of all protein to the diet and 17.2% of animal protein. Because several other estimates of fish consumption in Nauru are much higher (Section 5.2 above), the actual protein contribution of fish is probably much greater.

Animal protein substitutes for fish formerly consisted mainly of various types of imported meat, but the economic downturn sharply reduced the amount of food imports.

The large tuna harvest in Nauru waters by foreign-based fishing vessels may improve the food security situation. The National Tuna Management and Development Plan has as an objective "to improve the nutritional standards of the Nauruan people through increased

availability of fish, including tuna and bycatch species taken during tuna fishing, as a source of food in Nauru."

5.6 Employment

CoFish (2005) contains the most recent information on fisheries employment in Nauru. It gives the results of fisheries-focused socio-economic surveys carried out in 11 of the 14 districts of Nauru in October and November 2005:

- The total resident population at the time was estimated at 10 131 people and 1 230 households.
- A total of 245 households were surveyed for income and expenditure, with 97% of these found to be engaged in fishing activities.
- A total of 405 finfish fishers (357 men and 48 women) and 283 invertebrate fishers (149 women and 134 men) were interviewed. Survey results indicate an average of 3.7 fishers per household; when this is extrapolated, the total number of fishers in Nauru is 4 513, which includes 2 947 men and 1 566 women.

6. FISHERY SECTOR DEVELOPMENT

6.1 Constraints and opportunities

Some of the major constraints of the fisheries sector are:

- Many of the inshore fishery resources are fully or over-exploited.
- There is considerable difficulty promoting access by small-scale fishers to the large tuna resources.
- The lack of infrastructure (and the difficulties/expense of establishing that infrastructure) place a major limitation on domestic tuna industry development.
- The Nauru Fisheries and Marine Resources Authority (NFMRA) has considerable difficulty in carrying out its fisheries development functions in a time of financial stringency.
- FFA (2007) states that developing small-scale offshore fisheries targeting pelagic species is one of the few avenues for transferring effort from inshore fisheries but requires appropriate boats, equipment, gear, and fuel and increased investment in communications and other equipment for safe operations away from the island.

One of the major opportunities in the fisheries sector concerns regional cooperation: solidarity with neighbouring Pacific Island countries to take advantage of the fact that these countries control access to most of the tuna resources in the central and western Pacific Ocean. Using this strategy, possible outcomes include: (a) increasing access fees for foreign fishing vessels and (b) leveraging domestic tuna industry development.

A study of fishery development aspirations by the Forum Fisheries Agency in 2008[19] summarized the views of Nauru officials:

> Fisheries officials aspire to have expanded harbour facilities. A further aspiration is to use these facilities to catalyze the establishment of a locally-based longline fishery and an associated fresh tuna export packing facility. Involvement with purse seining is a possibility. Another view (from a former fisheries official) stresses the importance of what he considers as the sole opportunity for the future, artisanal longlining.

6.2 Government and private sector policies and development strategies

FFA (2007) explores in considerable depth the government's development strategy in the fisheries sector. The report states that the Nauru National Sustainable Development Strategy 2005-2025 (NSDS) identifies the priority areas for Nauru's future. In relation to fisheries and marine resources priorities are improved governance, food security and maximizing revenue with the emphasis on partnerships. There is a draft Policy Framework for the National Fisheries Objectives and Strategies 2003-2010 that expands on the fisheries aspects of the NSDS. The priority policies and strategies are:

[19] Gillett, R. (2008). A Study of Tuna Industry Development Aspirations of FFA Member Countries. Forum Fisheries Agency, Honiara, 70 pages.

1. promote and facilitate human resources development through appropriate fisheries educational and training programmes in association with national, sub regional, regional and international fisheries educational and training courses;
2. promote and facilitate the development of commercial fishing operations to generate revenue from export of fish and fish products, either through national programmes or in cooperation with neighbouring Forum Fisheries Agency member countries through sub regional or regional arrangements, or in joint venture arrangements with foreign fishing enterprises or organisations;
3. develop an effective monitoring, control and surveillance capability through national programmes and through cooperation with other countries in the region;
4. promote and facilitate the development of the private sector in fisheries related activities, including support for the establishment and operation of a local fishermen's association or cooperative;
5. the management of the Nauru Fisheries & Marine Resources Authority and its subsidiary bodies will be cost effective, productive and efficient;
6. undertake and implement fisheries development projects, including research and development activities, through national programmes or in association with donor countries and agencies.
7. implement and enforce conservation and management measures for the coastal fisheries and marine environment;
8. to partake effectively in sub-regional, regional and international fisheries meetings and conferences and to meet its regional and international obligations effectively.

6.3 Research

Currently the Nauru Fisheries & Marine Resources Authority does not have much capability to carry out substantial fisheries research. Consequently, most research projects have involved the government cooperating with outside researchers and agencies.

Some of the research topics (and agencies) have been:

- Tuna stock assessment (Secretariat of the Pacific Community)
- Baseline information on the status of reef fisheries (Secretariat of the Pacific Community)
- Tilapia eradication (FAO)
- Underwater bathymetry (Pacific Islands Applied Geoscience Commission)
- Milkfish growth trials (Taiwan PC)
- Ciguatera fish poisoning (University of the South Pacific)

6.4 Education

Education related to fisheries in Nauru is undertaken in a variety of institutions:

- Academic training in biological, economic and other aspects of fisheries is given at the University of the South Pacific in Suva.
- Training courses, workshops and attachments are frequently organized by the regional organizations: the Secretariat of the Pacific Community in New Caledonia and by the Forum Fisheries Agency in the Solomon Islands. The subject matter has included such diverse topics as fish quality grading, stock assessment, fisheries surveillance, and on-vessel observing.
- Courses and workshop are also given by NGOs and by bilateral donors.

6.5 Foreign aid

Historically, Nauru has not sought direct fisheries development assistance from bilateral or multilateral donors, although some assistance of this type has been channelled through FFA, SPC and other regional organisations of which Nauru is a member. The economic downturn that began in the early 2000s has resulted in Nauru actively seeking development assistance, including that for the fisheries sector.

Presently, the main donor activity in the fisheries sector is Australia's support for capacity enhancement at the Nauru Fisheries and Marine Resources Authority – primarily through the provision of an advisor.

The Secretariat of the Pacific Community also provides substantial assistance to Nauru. In the four-year period 2005-2008 SPC's Coastal Fisheries Programme provided USD 314 000 and the Oceanic Fisheries Programme, USD 57 000.

The Forum Fisheries Agency has long supported fisheries activities in Nauru, including that related to fisheries surveillance, fisheries management capacity enhancement, and financial performance of fishing/marketing operations.

Taiwan Province of China recently funded a project based on combining the use of small fishing canoes and cheap, shallow-water fish aggregating devices. The project cost was USD 43 000.[20] The European Union recently funded a canoe building project.

7. FISHERY SECTOR INSTITUTIONS

FFA (2007) summarizes the history and functions of the main government fishery institution in the country, the Nauru Fisheries and Marine Resources Authority:

- In 1997 the Nauru Fisheries and Marine Resources Authority Act established NFMRA as an entity with the powers and functions to regulate and develop activities relating to Nauru's fisheries and marine resources.
- The Authority is responsible for the management of offshore fisheries, coastal fisheries and aquaculture; as well as owning the Nauru Fisheries Corporation (NFC) that acts as the commercial arm of the Authority.
- The NFMRA Board has a draft Policy Framework for the National Fisheries Objectives and Strategies 2003-2010 that expand on the NSDS.
- Under recent measures implemented by the Nauru government to consolidate all revenue sources, control of licence and foreign fishing vessel access fee revenues was transferred from the NFMRA to Treasury, requiring central agency approval of NFMRA budgets and expenditure.

In April 2010 NFMRA had a total of 59 employees on the payroll and 5 vacancies. The sections of the Authority (and the main officers) are:

- Executive Department (CEO, Deputy CEO)
- Oceanic Fisheries Department (Manager)
    - Multilateral & Bilateral Treaties Section (Senior Oceanic Officer)
    - Licensing Section (Licensing/Revenue Officer)
    - Surveillance and Compliance Section (MCS Officer, VMS Officer)
    - Catch Data/Statistics Section (Catch Data Officer)
- Coastal Department (Coastal Manager)
    - Aquaculture Section (Aquaculture Officer)
- Fisheries Support Services
    - Accounts Section
    - Administration Section
    - Information Technology Section
    - Human Resources Development Section
    - Technical Services Section
    - Maintenance
    - Safety/Communications (SAR)

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

- www.spc.int/coastfish/countries/nauru/nfmra/information.htm This contains links to 17 reports relevant to the fisheries of Nauru.
- www.sprep.org/publication/pein_nauru.asp This contains a virtual environmental library.
- www.paclii.org/nr/indices/legis/Nauru_Acts_by_Year.htm Contains the legislation of Nauru, including the fisheries laws and regulations.

[20] Blanc, M. and A. Templeton (2008). Review of the Nauru Canoe and Nearshore FADs Project. Secretariat of the Pacific Community, Noumea.

8. GENERAL LEGAL FRAMEWORK

The most important laws relating the fisheries in Nauru are the Nauru Fisheries and Marine Resources Authority Act 1997 and the Fisheries Act 1997.

The most significant aspects of the NFMRA Act are establishing:

- Objects of the authority
  - to manage, develop, conserve and protect the fisheries and marine resources of Nauru in such a way as to conserve and replenish them as a sustainable asset for future generations; and
  - to promote the sustainable utilisation of the fisheries and marine resources of Nauru to achieve economic growth, improved social standards, improved nutritional standards, human resource development, increased employment and a sound ecological balance; and
  - to pursue effective strategies for managing the fisheries and marine resources of Nauru so as to maintain the integrity of marine ecosystems, to preserve biodiversity, to avoid adverse impacts on the marine environment, and to minimise the risk of long-term or irreversible effects of resource extraction operations to enhance the administrative, legal, surveillance and enforcement capacities of the Republic for the management, development, conservation and protection of the fisheries and marine resources of Nauru, in accordance with any law relating to fisheries or marine resources.
- Functions of the authority
  - to carry out and give effect to any policy directions of the Minister and the Cabinet on the utilisation, management, development, conservation and protection of fisheries and marine resources; and
  - to make recommendations and give advice to the Minister on matters connected with its objects; and
  - to administer and enforce this Act and any other law relating to fisheries or marine resources, to the extent required or permitted by that law, and any related policy approved by the Cabinet; and
  - to advise and make recommendations to the Minister on the operation of this Act and of any other law which relates to its objects, and on needed changes and amendments

The NFMRA Act also includes provisions for a board of directors, funds of the authority, powers of the authority, limitations on powers of the authority, liability of directors, and exercise of powers of the board.

The Fisheries Act 1997 is concerned with the management, development, protection and conservation of the fisheries and living marine resources of Nauru. This act has provisions:

- to exercise the sovereign rights of the Republic to explore, exploit, conserve and manage those resources within the fisheries waters of Nauru in accordance with the relevant rules of international law; and
- to utilise, manage, develop, protect and conserve those resources in such a way as to conserve and replenish them as a sustainable asset for future generations, and to achieve economic growth, improved social standards, improved nutritional standards, human resource development, increased employment and a sound ecological balance; and
- to pursue effective strategies for managing the fisheries and marine resources of Nauru, including the registration of fishing boats and the licensing of fishing and fishing activities; and
- to repeal the Marine Resources Act 1978.

Other laws and regulations important to Nauru fisheries (and a short description) are:[21]

[21] Source: www.spc.int/coastfish/countries/nauru/nfmra/information.htm

- NFMRA Amendment Act 2004 (Transfers receipt of NFMRA revenue from NFMRA to Treasury)
- Fisheries Regulations 1998 (Describes requirements for vessel registration and licencing, and specific measures for protection of certain resources)
- Nauru Fisheries (PNA Third Implementing Arrangement) Regulations 2009 (Give legal expression in Nauru waters to the Third Implementing Arrangement of the Nauru Agreement)
- Sea Boundaries Act 1997 (Sets out the scope of Nauru's marine jurisdiction)
- Sea Boundaries Proclamation 1997 (Declares coordinates of Nauru EEZ)

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