FISHERY AND AQUACULTURE COUNTRY PROFILE	Food and Agriculture Organization of the United Nations	FID/CP/NIU
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

NIUE

1. GENERAL GEOGRAPHIC AND ECONOMIC DATA

Area:	259 km²
Water area:	390 000 km²
Shelf area:	[no continental shelf]
Length of continental coastline:	64 km (length of the coast of the island)
Population (2007)*:	2 000
GDP at purchaser's value (2006)	13.4 million USD[1]
GDP per head (2006):	7 902 USD
Agricultural GDP (2006):	3.2 million USD[2]
Fishing GDP (2006):	0.4 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]	200	0	0	200	100.0
Fish for animal feed and other purposes	0	---	0	---	

Estimated Employment (2003):	
(i) Primary sector (including aquaculture):	5 [5]
(ii) Secondary sector:	(Unavailable)
Gross value of fisheries output (2007):	2 520 588 USD[6]

[1] Source: http://www.spc.int/prism/Country/NU/stats/Economics/GDP/gdp.htm, current convergence : 1NZD = 0.65 USD.
[2] This is the contribution to GDP of agriculture, hunting, forestry, and fishing in FY 2003
[3] This is the official fishing contribution to GDP; A recalculation shows the total fishing contribution to be USD$445,349: 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.
[5] The report of the 2002 Household Income and Expenditure Survey states that five people were working for pay in "fishing, fish farms, service activities to fishing". Source: . HIES 2002 Final Report. Economic, Planning, Development, and Statistics Unit, Premier's Department. Government of Niue.

Trade (2007):	
Value of fisheries imports:	(unavailable)
Value of fisheries exports:	(unavailable)[7]

Niue is an uplifted coralline island with the greater part of its coast comprised of an ancient, raised reef platform forming cliffs which rise to around 60 m above sea level. Niue has no lagoon and the outer reef slope descends precipitously to 1 000 m within 5 km of the shore. Cliffs predominate along much of the coastline and there are relatively few locations for ocean access. The reef area has been estimated by researchers from the Secretariat of the Pacific Community to be about 620 ha.

Although the island's land area is only 259 sq. km., Niue's EEZ extends over an area of 390,000 sq. km[8]. Located in this zone about 125 nautical miles southeast of Niue Island is the semi-exposed Beveridge Reef. At 19 degrees south latitude, Niue experiences greater annual temperature variation than most of its Pacific Island neighbors.

There are 14 coastal villages in Niue. The population of Niue continues to drop – from 5 200 in 1966 to about 1 476 in mid-2010.

3. FISHERY SECTOR STRUCTURE

3.1 Overall fishery sector

Fisheries in the waters of Niue are primarily oriented to subsistence, but there is some small-scale commercial fishing and sporadic offshore industrial-scale fishing. The 2007 production can be estimated as:

	Coastal Commercial	Coastal Subsistence	Offshore Locally-Based	Offshore Foreign-Based[9]	Freshwater	Aqua-culture
Volume of Production (metric tonnes)	10	140	640	0	0	0
Value of production (USD)	58 824	617 647	1 844 118	0	0	0

Source: Gillett (2009)

The main trends and important issues in the fisheries sector

The main trends in the sector include:

- A decreasing subsistence catch with the declining population
- The rise and fall of locally-based longliners and tuna processing
- Maintaining an active fish aggregation device (FAD) deployment programme
- A decline in the frequency of air service to the islands, impacting on the exports of fish and the arrival of tourists, many of whom come for recreational fishing and diving.
- Increasing attention to the use of fisheries management plans and to the ecosystem approach to fisheries management.

Some of the major issues in the fisheries sector are:

- Niue is a high cost location from which to operate longline vessels
- Labour is scarce and expensive
- Infrequent and costly air cargo constrains export opportunities

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[6] From Gillett (2009); includes the six 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] Unpublished data from Customs Niue indicates that fish exports were 88.5 mt in 2005, 403.6 mt in 2006, and 602.2 mt in 2007 – but no values have been assigned.
[8] Some sources cite 450 000 sq km as the size of the Niue zone.
[9] This is the catch in the Niue zone by vessels based outside the country.

- Although it is recognized that wharf infrastructure constrains some opportunities, there is reluctance to spend money on its upgrading –structures could be wiped out in a cyclone.

3.2 Marine sub-sector

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

- Offshore fisheries have been undertaken on an industrial scale by locally and foreign-based vessels operation within the Nauru until 2003.
- Coastal fishing is primarily carried out for subsistence purposes, with some local sales.

3.2.1 Marine Catch profile

Since 2003 there has been no authorized foreign fishing in Niue's zone. US purse seine vessels are permitted under a multilateral treaty to fish in the Niue, but actual fishing in Niue waters by those vessels has not occurred in many years. Tafatu (2006)[10] states that at the beginning of 2005 Niue began licensing longline vessels to fish under charter arrangement. Production from those boats reached a maximum in 2006 and early 2007. Fishing operations stopped in December 2007.

Niue reported longline catch to WCPFC since 2005 and in 2009, 182 tonnes of tunas and tuna-like species were caught with three longliners. The corresponding figures for 2006, 2007 and 2008 were 229 tonnes (10 boats), 212 tonnes (7 boats), and 18 tonnes (3 boats), respectively.

Using FFA reports, it is estimated that the 2006 and 2007 catches taken from Niue EEZ were about 640 tonnes annually, worth about USD 1.6 million[11]. The catch by the offshore fleet in the Niue EEZ in 2008 was zero.[12]

Much of the costal fishing in Niue is undertaken by fishing off the reef (i.e. spear fishing, line fishing, gleaning) or fishing from small craft just outside of the reef. In recent times the largest fishing vessels in Niue have been Samoa-style catamarans. These vessels are stored on land at Niue's only wharf at Alofi.

Gillett and Lightfoot (2001) estimated that the annual catch from coastal commercial fisheries was 12 tonnes (worth NZ$96 000) and that the coastal subsistence catch was 194 tonnes (worth NZ$315,640). This estimate has been updated by:

- The results of the 2002 household income and expenditure survey
- Population changes
- A recent fisheries-focused survey
- Discussions with the Director of Niue's Department of Agriculture, Forestry and Fisheries

Selectively using the above information, the 2007 coastal catch has been estimated as:

- Coastal commercial: 10 tonnes, worth USD 58 824
- Coastal subsistence: 140 tonnes, worth USD 617 647

3.2.2 Marine landing sites

The only wharf is at Alofi, the main urban area. This part of Niue is sheltered from the prevailing south-easterly tradewinds, but vulnerable to wind and swell from the west. This is because, unlike most ports in Pacific Island countries, there is no barrier reef protecting the wharf area. In major storms (e.g. cyclone Heta in January 2004) much of the exposed wharf equipment has been damaged.

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[10] Tafatu, J. (2006). Country fisheries report – Niue. Western and Central Pacific Fisheries Commission, Scientific Committee Second Regular Session, Manilla, Philippines, 7–18 August 2006.

[11] This amount is lower than that list on the table in Section 3.1 due to different exchange rates in 2006 and 2007.

[12] According to the Niue Fisheries Division, the 2008 catch catches of tuna by the sole longliner operating out of Niue was 16 tonnes – but this fishing (due to the size of vessel and fishing area) is considered in this report to be coastal commercial fishing.

When the large longliners operated out of Niue in the mid-2000s, their catch was landed at the Alofi wharf. The single small longliner also offloads its catch at this wharf, as well as many other smaller boats.

Two other sites have some improvements to facilitate the landing of canoes and small boats. Fishing craft also land catches at many unimproved landings around Niue. The distribution of vessels in the table in Section 3.2.3 is indicative of the importance of the various areas as landing sites.

3.2.3. Marine fishing production means

Tafatu (2006)[13] states that the chartered longliners that began operating in the mid-2000s ranged in size from 10-29 meters. These vessels fished into the new government joint venture fish processing facility, Niue Fish Processors Ltd (NFP). In 2006 there were 13 longliners based in Niue, but all industrial-scale longlining ceased in late 2007. The only longliner to operate in 2008 was a 9-metre aluminium catamaran of the Samoan *alia* design.

With respect to coastal fishing, fishing techniques can be partitioned into three categories:

- Shore-based fishing techniques include hook and line, occasional gillnetting, reef gleaning, diving and spear fishing.
- Fishing from boats close to the island includes shallow-water handlining and the traditional catching of *Decapterus* (*ulihega*, see box).
- Further offshore, fishing activity is mainly trolling or vertical longlining with a few other methods of hook gear. Fishing effort is predominantly focused around anchored FADs which are located within 3 nautical miles of the island (Fisheries Division 2009). [14]

Fishing for Scads in Niue

Fish of the genus *Decapterus* are commonly referred to as scads, round scads, and mackerel scads. In Niue, they are called "ulihega". These fish are caught in Niue by traditional techniques and are valued for both food and bait. Using single-man canoes, groups of fishermen bait small hooks with bits of coconut meat to catch the fish relatively close to shore, usually around sunset. The fishing season appears to correspond to the period of highest sea surface temperature, October to April. Although the annual catch of scads in Niue is probably much less than five tonnes, it is likely that scads account for a higher proportion of the total fish catch in Niue than in any other Pacific Island country. Source: Gillett (1987)[15]

Niue has a small-scale fleet comprising of traditional outrigger canoes and small (3.7 to 8.0 m) aluminium boats. The number, types, and location of small-scale fishing vessels can give considerable insight on the means of production. Information from the 2006 census (Census . 2007)[16] is used to construct the table below.

Numbers and Types of Fishing Vessels by Village

Village	Canoe	Aluminium Dinghy	Inflatable Dinghy	Wood Boat	Outboard-powered Skiff	Total
Makefu	11	0	0	4	0	**15**
Tuapa	12	6	0	1	6	**25**
Namukulu	1	0	1	0	1	**3**
Hikutavake	6	0	0	0	0	**6**
Toi	0	0	0	0	0	**0**

[13] Tafatu, J. (2006). Country fisheries report – Niue. Western and Central Pacific Fisheries Commission, Scientific Committee Second Regular Session, Manilla, Philippines, 7–18 August 2006.
[14] Fisheries Division (2009). Niue Annual Report. Paper WCPFC-SC5-AR/CCM-16, Scientific Committee, Western and Central Fisheries Commission, Pohnpei.
[15] Gillett, R. D. (1987). Hawaiian-Style Decapterus Fishing Trials in Niue. Document 87/4, FAO/UNDP Regional Fishery Support Programme, Suva, 24 pages.
[16] . Census 2006. 2007. Economic, Planning, Development, and Statistics Unit, Premier's Department, Government of Niue.

Village	Canoe	Aluminium Dinghy	Inflatable Dinghy	Wood Boat	Outboard-powered Skiff	Total
Mutalau	9	1	0	0	1	**11**
Lakepa	3	2	0	0	3	**8**
Liku	3	1	0	1	2	**7**
Hakupu	1	1	0	0	0	**2**
Vaiea	3	4	0	1	7	**15**
Avatele	24	10	0	2	9	**45**
Tamakautonga	11	4	2	0	6	**23**
Alofi South	29	28	1	12	30	**100**
Alofi North	9	9	1	2	12	**33**
Total	**122**	**66**	**5**	**23**	**77**	**293**

Tuara (2000)[17] gives information on the fishing production means of women in Niue. During low tide women harvest on the reef flat, collecting octopus, alili (turbo snail), ugako (tube worms), sea urchins, sea cucumbers and shellfish using their hands, steel hooks, spanners, axes hammers, screw drivers, and sticks. The metal tools are used to chip away at the reef and dislodge the tubeworms, and clams. Kama kama (crabs) are collected manually or with the assistance of spears and knives. Two types of limu (seaweed) are collected by hand from rock pools in the reef. Hihi vao *(*sea snail) are collected by hand, primarily to make shell necklaces, while hihi uli (sea snail) are collected for food and for shell necklaces. Reef gleaning is carried out during the day when the tide is low. At night the women hunt for crabs, lobster (when in season), and reef fish, using their hands, bush knives, or long spears. A coconut frond torch or a battery-operated torch is used to light the way. Most Niuean women are content to reef glean for seafood, having no desire to fish in the deeper waters surrounding the island.

3.2.4 Main resources

WCPFC Yearbook indicated that the catch composition of Niue longliners is dominated by albacore (60-80 %), followed by yellowfin (10-30 %).

The estimated catch composition for Niue's single-vessel longline fishery in 2008 was dominated by catches of yellowfin (48%) and albacore (35%), with "others" making up 22%. In 2007 when many more longliners operated, the catch composition was albacore (65%), yellowfin (14%), bigeye (1%), and others (20%). Marlins (blue, striped, black, in that order) made up most of the "others" category.

Fishbase (www.fishbase.org) lists 212 finfish species that are found on Niue. Invertebrates are quite important in Niue, relative to neighboring countries. Lambeth and Fay-Sauni (2001)[18] carried out research on invertebrates and seaweeds in Niue and recorded Niuean names for a total of 63 Niuean invertebrate and 3 seaweed, with 41 of these collected for food. They give the most important invertebrates and seaweeds as: the spiny lobster (*Panulirus sp*.), slipper lobster (*Parribacus sp.),* red reef crab (*Etisus splendidens*), three-spot reef crab (*Carpilius maculatus*), giant clam (*Tridacna squamosa* and *T. maxima*), the green snail (*Turbo setosus*), and caulerpa seaweeds or sea grapes (*Caulerpa racemosa,* and *C. cupressoides*).

Trochus were introduced to Niue in August 1992 in an attempt to establish a commercially-exploitable population of this species. A total of 223 shells from Fiji were placed on reefs at Hakapu (99 shells), Namakulu (77) and Tamakautoga (47). In August 1996 another 311

[17] Tuara, P. (2000). An Assessment of The Role of Women in Fisheries in Niue. Secretariate of the Pacific Community, Noumea.
[18] Lambeth, L. and L. Fay-Sauni (2001). Niue's Reef-Flat Invertebrate Fishery - information and recommendations for inclusion in a Niue inshore fisheries management plan. Secretariat of the Pacific Community, Noumea.

shells from Tonga (progeny of an earlier transplant from Fiji) were placed on reefs at Namakulu and Tamakautoga.

3.2.5 Management applied to main marine fisheries

In considering current fisheries management in Niue, it is important to consider the historical context. Pasisi (1995)[19] states:

> *Given that fishing pressure, due to Niue's relatively low population, has been proportionately low and predominately on a subsistence scale, the issues of management, conservation, and sustainability have been somewhat ignored. Reflecting this is the current almost non-existence of inshore fishery strategies/plans*.

Offshore fisheries

Niue 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 draft tuna and billfish management plan was prepared. The plan was not officially adopted but used as a working plan by the Department of Agriculture, Forestry and Fisheries. The objectives in that plan are given as:

- Ensure that the utilisation of the tuna, billfish and wahoo stocks in the waters of Niue is consistent with the sustainable utilisation of these stocks in their entirety;
- Eliminate illegal fishing activity in the waters of Niue;
- Maximise benefits to Niue, including economic and social, from the long-term sustainable utilisation of its tuna and billfish resources;
- Minimise any adverse interactions between fisheries, in particular, between the large-scale commercial industry and the small-scale commercial, subsistence, charter or recreational fishers;
- Minimise the impact of target fishing on both the marine environment and bycatch species;
- Identify and secure funding to support the development and implementation of management measures to pursue the objectives of the Plan;
- Assist to fulfill regional and international obligations regarding the conservation and management of highly migratory fish stocks in Niue's waters; and
- Ensure that all activities undertaken as part of this Tuna and Billfish Fishery Plan are implemented and administered efficiently and cost-effectively.

Documentation jointly prepared by the Department and the Forum Fisheries Agency in the early 2000 provides some additional insight into the Department's thinking on tuna fishery management:

- The Territorial Seas and Exclusive Economic Zone Act provides a sound basis for the development of a fisheries management plan.
- The primary objective for a management plan is the conservation and management of tuna stocks within the Niue EEZ. However, additional objectives might include economic factors such as maximising the benefits (employment, foreign exchange earnings, development and protection of the local small scale fishery etc.) to Niue from the exploitation of tuna resources within the EEZ.
- A variety of management measures based on a choice between input and output controls are available. Input control options include setting a limit on vessel numbers, setting a limit on days fishing and setting a limit on the number of hooks set. Output controls might be done by setting an overall catch level allowing free competition between vessels and monitoring the catch, closing the fishery when the target catch level is reached.

[19] Pasisi, B. (1995). Country Statement – Niue Island. Country Paper 9, Workshop on the Management of South Pacific Inshore Fisheries. South Pacific Commission, Noumea.

Coastal fisheries

With respect to coastal fisheries, the Niuean National Management Plan for the Coastal Fishery states the following: [as given in Chapman (2004)[20]]

> **Goal**: to maintain the productivity, and maximise the overall sustainable benefit to Niue, of Coastal Fisheries in all areas permitted to fishing.
>
> **Objectives of the Plan:**
> - Ensure that the utilisation of coastal fishery resources is consistent with obtaining the maximum long-term benefit for the people of Niue, according to social development goals defined by the Government and/or Village Councils from time to time;
> - Ensure that the utilisation of coastal fishery resources is consistent with maintaining the integrity of coastal marine ecosystems, particularly coral reef ecosystems, taking into account seasonal, annual, decadal, and other natural environmental cycles;
> - Effectively integrate National and Village coastal fisheries governance systems;
> - Ensure that there is a balance in perceived equity in the right to use or enjoy coastal fishery resources by all relevant groups and stakeholders, in each Village Council area across the nation as a whole;
> - Provide early warnings for potential or actual crises in coastal fisheries and their supporting ecosystems;
> - Contribute to minimising the impact of non-fishing human impacts on coastal fishery resources;
> - Assist in fulfilling any regional and international obligations of Niue regarding the identification, conservation and management of coastal fishery species and their habitats;
> - Ensure that all activities undertaken as part of this Plan are implemented and administered efficiently and cost-effectively;
> - Ensure that Niue has sufficient capacity to implement the Plan; and
> - Review the progress of this Plan against objectives 1 to 7 after a period not exceeding five years from each implementation, and make any amendments necessary to better achieve the overarching Goal of the Plan or of its parent legislation.

In recent years the use of marine protected areas as a tool for inshore fisheries management has increased.

Institutions

The main institution involved with fisheries management in Niue is the Department of Agriculture, Forestry and Fisheries. This agency is discussed in Section 7 below.

3.2.6 Fishermen Communities

The concept of "fishermen communities" has limited applicability to Niue. Most households in the villages of Niue are involved in fishing activities. It could therefore be stated that all villages in Niue are "fishing communities".

3.3 Inland sub-sector

There are no freshwater fisheries in Niue. Unlike most Pacific Island countries, neither tilapia nor freshwater shrimps (*Macrobrachium*) are caught on Niue.

3.4 Recreational sub-sector

In the mid-2000s, Chapman (2004) examined commercial sport fishing in Niue and indicated there was one full-time charter boat, two to three vessels used for charter work occasionally, and an annual fishing tournament.

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[20] Chapman, L. (2004). Nearshore Domestic Fisheries Development in Pacific Island Countries and Territories. Secretariat of the Pacific Community, Noumea.

Because of the difficulties for tourists travelling to Niue in recent years, the number of vessels involved in fishing charter work has declined.

3.5 Aquaculture sub-sector

In 1994 a feasibility study was carried out with the assistance of FFA and ICLARM on the potential for farming of freshwater prawns and crayfish, and the establishment of a giant clam hatchery. The basic conclusions reached at that time were that such initiatives would be costly to set up and run and not economically viable (Fisheries Division 1999).[21]

There is currently no aquaculture activity on Niue.

4. POST-HARVEST USE

4.1 Fish utilization

In previous years (2005 until mid 2007) the majority of the catch of albacore from Niue was exported to the two canneries in American Samoa with small quantities of yellowfin and big eye exported as chilled sashimi grade products to the USA and Hawaii, as well as frozen loins of other species to New Zealand markets and local consumption. Catches for 2008 has been destined for consumption on the local market in both fresh and frozen form (Fisheries Division 2009).

No discussion of post-harvest aspects of fisheries in Niue would be complete without mention of the tuna processing plant (box). Although that facility is not currently operating (it closed in late 2007), it is noteworthy due to several features, including the possibility of re-opening in the future

Locally-Based Foreign Processing Companies in Niue

Niue has offered an interesting, if not totally traditional, form of second-generation access arrangement to encourage the development of domestic industry in its micro economy. In lieu of access agreements, the key development for Niue's fishing industry is the negotiation of a new joint venture between the government of Niue and the private company Reef Group. Reef is a New Zealand firm that focuses on ocean-going sea freight, that holds a monopoly on freight services to Niue and feeds several other Pacific Island countries.

The creation of Niue Fish Processors Ltd (NFP) has had several important effects on local development and on resources use: All foreign commercial tuna vessels fishing in Niue's zone are required to offload all of their catches to the NFP plant. Only vessels that agree to these terms will be licensed. NFP currently employs 6 Niuean staff and 3 expatriates.

In addition to its role as a packing plant, NFP has also recently purchased two large longliners that will be used to supply the plant. The vessels are owned by Reef Group and are registered in the Cook Islands. The original intention was that the factory would simply process and export fish on a contract basis for independent fishing boats, but due to the lack of supply it became necessary for the factory to have company boats to supply it.

The wharf appears to be one of the biggest shortcomings of the venture as it is very small, shallow, subject to surge and several boats have been damaged on the surrounding reef trying to access it. Generally, services and logistics are proving very difficult – airport services and tele-communications do not perform reliably.

Summarizing, Niue is an interesting example of how fisheries access to the resource can be used to induce domestic development in even the most isolated of locations. Niue is the smallest, remotest and one of the least well-served Pacific Island countries in terms of infrastructure and

[21] Fisheries Division (1999). Country Statement – Niue, Information Paper 24, 1st SPC Heads of Fisheries Meeting, Secretariat of the Pacific Community, Noumea.

yet it has succeeded in attracting foreign investment in a major tuna processing facility. Source: Campling et al. (2007)[22]

With respect to coastal fisheries, most of the fisheries production is consumed at home. Some, however, is sold.

4.2 Fish Markets

Tuara (2000) states that most seafoods are for family consumption. It is only when there is a surplus that seafood is sold either raw or cooked at the Alofi market on Tuesdays and Fridays. A few women also sell from home, or to restaurants, hotels and shops.

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 Niue. 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 2003 was responsible for 4.2% of the GDP of Niue. A recalculation using a different methodology shows it was 4.4% in 2003. .
- Provisional 2007 export data suggests that fishery exports made up over 90% of the value of all exports in 2007.
- Access fees paid by foreign fishing vessels represent 2.3% of all government revenue.
- The five commercial fishers in Niue represent 0.4% of Niue's labour force.

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 Niue, based on the 2007 FAO Food Balance Sheet, is 100.0 kg. Various other studies have made estimates ranging between 49.0 and 118.9 kg.

Factors influencing the future demand for fish are emigration, increased price of fish, relative cost of fish substitutes, and changes in dietary preferences.

5.3 Supply

The government has several strategies to increase the national fish supply. These involve efforts to conserve inshore fisheries resources and increase the production from offshore resources through support for fish aggregation devices. The government's efforts to promote the processing of tuna in Niue have the side effect of increasing the fish supply.

Major factors affecting the local supply of fish are the cost of fuel, the weather (i.e. access to the sea), alternative employment, and the offloading of fish by the offshore fleet.

5.4 Trade

Unpublished data from Customs Niue indicates that fish exports were 88.5 tonnes in 2005, 403.6 tonnes in 2006, and 602.2 tonnes in 2007. The provisional 2007 export data suggests that fishery exports made up over 90% of the value all exports in that year. With the closing of the processing and associated longline fishing activity in December 2007, this level of fish exports has fallen considerably.

5.5 Food security

Fish is an important element of food security in Niue. The FAO food balance sheets show that in 2007 fish contributed an average of 27.9% of all protein to the diet and 42.8% of animal protein.

[22] Campling, L., E. Havice, and V. Ram-Bidesi (2007). Pacific Island Countries, the Global Tuna Industry and the International Trade Regime – A Guidebook. Forum Fisheries Agency, Honiara.

Animal protein substitutes for fish consist mainly of various types of local and imported meat, much of which are extremely fatty and have negative health implications.

5.6 Employment

The report of the 2002 household income and expenditure survey (HIES 2002)[23] contains information relevant to fisheries employment. The "annual fish income" is estimated to be USD$13 358. This represents 0.9% of all income in Niue for the year (USD$1 526 113). 12% of all households have "fish income". The survey also states that five people were working for pay in "fishing, fish farms, service activities to fishing".

The number of fishing vessels (table in Section 3.2.3 above) gives some information of participation in fishery activities. The total of 293 fishing vessels gives an indication of the minimum number of people involved in types of fishing that require a vessel.

The Director of Niue's Department of Agriculture, Forestry and Fisheries indicates that in late 2008 there were five or six people that could be considered full-time commercial fishers. Considering the total labour force of Niue was about, the five commercial fishers therefore represent 0.4% of Niue's labour force.

5.7 Rural development

The concept of "rural development" is not very relevant to a tiny country such as Niue – with a population of around 1300 in 14 coastal villages, all in close proximity. In the Niue context, rural development in the fisheries sector equates to fisheries sector development, the subject of the next section.

6. FISHERY SECTOR DEVELOPMENT

6.1 Constraints and opportunities

Some of the major constraints of the fisheries sector are:

- The limited reef area
- The high cost of operating longline vessels from such a remote location
- Labour that is scarce and expensive
- Infrequent and costly air cargo
- Inadequate wharf infrastructure
- The highly destructive cyclones that occasionally batter the island, and, especially, the exposed fishery infrastructure

The opportunities in the fisheries sector include:

- Commercial sportfishing, if the air service to Niue is enhanced
- Building on the model of using fishing access to leverage domestic tuna industry development
- Increased cooperation and solidarity with neighboring Pacific Island countries to increase the value of the tuna resources.

Although the fishery resources of Beveridge Reef may have considerable development potential, the distance from Niue Island, the cost of travel, and the large vessel required to make the trip, severely constrains the current fisheries value of the reef.

6.2 Government and private sector policies and development strategies

The Corporate Plan 2009-2013 of the Department of Agriculture, Forestry and Fisheries (Government of Niue 2009)[24] contains several types of strategies. Those that are applicable to the fisheries development are:

- Develop and implement a National Fisheries Management and Development Plan and ensure it aligns with the ecosystem approach to fisheries management.

[23] HIES 2002 Final Report. Economic, Planning, Development, and Statistics Unit, Premier's Department. Government of Niue.

[24] Government of Niue (2009). Corporate Plan 2009-2013, Department of Agriculture Forestry, Fisheries.

- Ensure the principles of the ecosystem approach to fisheries management is institutionalised and applied to the development of fisheries management and development plans.
- Assist in the repair and development of the wharf infrastructure and utilities to cater for the fishing and tourist industries.
- Pursue the re-establishment of the Government fishing joint venture.
- Update the infrastructure and services report aimed at enhancing the operating environment for commercial longline fisheries.
- Develop the sport fishery in support of tourism development.
- Strengthen the implementation of the Niue FAD Program in support of local fishermen and ensuring the protection of food and nutritional security.
- Maintain and strengthen the deployment, maintenance and research into FAD developments to maximise the domestic fishing production of the pelagic fishery.
- Develop and institutionalise a National Vaka Program dedicated to ensuring the traditional practise and methods of fishing are maintained.

6.3 Research

Fisheries and aquaculture research in Niue is the responsibility of the Fisheries Division. The Division does not have a strong research capability, so it normally collaborates with regional fisheries organizations. SPC has carried out many research projects in Niue in the past decade (some of these are given in Section 6.5 below). Most of FFA research in Niue has been oriented to economics. FAO has sponsored studies on *Decapterus*, coconut crab, and development potential.

6.4 Education

Education related to fisheries in Niue 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 (USP) in Suva, and to a lesser extent at universities in New Zealand and elsewhere.
- The USP extension centre in Niue offers courses, including those from the Marine Studies Programme, on a credit and non-credit extension basis.
- 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, seaweed culture, fisheries surveillance, and on-vessel observing.
- Courses and workshop are also given by NGOs and by bilateral donors.

6.5 Foreign aid

New Zealand is the largest donor of development assistance to Niue. Funding for the fisheries sector has also flowed from other sources, including Australia, FAO, UNDP, the Global Environment Facility, and regional agencies. A significant amount of assistance is related to rehabilitation of infrastructure after cyclones.

The country has enjoyed substantial development assistance from the major regional agencies involved in fisheries: the Secretariat of the Pacific Community and the Forum Fisheries Agency. SPC has contributed to a variety of fishery efforts, including inshore/offshore surveys, tuna stock assessment, data processing, FAD fishing skills, production and marketing of shellcraft, setting up a marine reserve, setting up a household fishing and consumer survey, establishing port sampling programme. The FFA has been especially active in support to establishing a domestic tuna industry.

7. FISHERY SECTOR INSTITUTIONS

Responsibility for fisheries and marine resource matters is vested in the Department of Agriculture, Forests and Fisheries. The Corporate Plan 2009-2013 of the Department of Agriculture, Forestry and Fisheries (Government of Niue 2009) gives the mission statement of the Fisheries Division:

Actively facilitate the utilization of Niue's marine resources through sustainable and environmentally sound fisheries development strategies at all levels.

The Plan sets seven objectives in fisheries:

- Objective 1: Ensure that Niue's inshore and offshore fisheries resources are sustainably managed in line with national, regional and international standards.
- Objective 2: Adopt a strategic approach to fisheries development by way of institutionalising policies and development plans to guide private sector development and encourage employment and income generating opportunities in a sustainable manner
- Objective 3: Maintain and implement development plans for identified inshore and offshore fisheries, in particular to support the national Tuna industry development plan and activities.
- Objective 4: Maintain an active research program into appropriate fishing technologies such as Fish Aggregating Devices, advances in gear technology and fishing methodologies in support of local stakeholders.
- Objective 5: Develop and implement effective monitoring, control and surveillance programs across all fisheries waters, legislation, and licensing and management systems.
- Objective 6: Maintain and implement effective licensing and data collection programs for both offshore and inshore fisheries
- Objective 7: Maintain an effective maintenance program for all department plant, vehicles, machinery, winches, FADs and moorings, as well as providing fisheries related repairs and support services for the general public.

The Department of Agriculture, Forests and Fisheries is currently headed by a fisheries specialist. The Department has a number of Divisions, one of which is the Fisheries Division. The Fisheries Division presently has four officers:

- Principal Fisheries Officer
- MCS and Development Officer
- Maintenance Officer
- Fisheries Officer

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

- www.spc.int/coastfish/countries/Niue/niue.htm – Contains information on legislation, management plans, applications for licences, publications, contact details for key fisheries officials
- www.sprep.org/att/publication/000544_IWP_PTR38.pdf - Niue sustainable coastal fisheries pilot project: Literature review and pilot baseline survey)
- http://catalogue.nla.gov.au/Record/1329462 -The report of a fisheries resources survey of the island of Niue by SPC.

8. GENERAL LEGAL FRAMEWORK

Fisheries in Niue are regulated by the Domestic Fishing Act 1995, the Domestic Fishing Regulations 1996, and the Territorial Sea and Exclusive Economic Zone Act 1996.

The domestic Fishing Act 1995 covers three main areas:

- Protection of fish: prohibited use of illegal fishing means, marine reserves, restriction on taking of certain species, prohibited exports, and catch/size limits.
- Sunday fishing ban: Sunday fishing is prohibited between certain hours
- Safety at sea: all vessels, including fishing vessels propelled by oars or otherwise, but excluding canoes, must be licensed by the fisheries officer and must carry certain safety equipment

Cabinet is empowered to make regulations for the purpose of giving full effect to the provisions of the Act and has done so through the Domestic Fishing Regulations 1996.

Domestic Fishing Regulations 1996 give specifics on prohibited fish exports, fish size limits, fish quota limits, destructive organisms, protected fish species, vessel safety equipment, annual licence fee for vessels, requirements for vessels fishing inside Niue's territorial sea zone, requirements for vessels fishing outside Niue's territorial sea zone, and measurement of crustaceans for size limits.

The Territorial Sea and Exclusive Economic Zone Act 1996 establishes a territorial sea of twelve nautical miles and a 200 nautical mile exclusive economic zone of approximately 390,000 sq km in size. In addition, the act covers fisheries management and development (designated fisheries, management/development plans), unauthorised fishing, prohibited fishing methods, access agreements, and licensing.

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