

TONGA SEA CUCUMBER FISHERY AT A GLANCE: FACTS & FIGURES

The importance of sea cucumber:

Environmental values:

- Responsible for cleaning up the sea bed—moving, consuming and mixing marine sediments
- Act as decomposers, breaking down materials into nutrients so they can be re-used in the ecosystem

Social values:

- Source of protein—food security
- Fishing as a way of life

Economic values:

- Source of foreign currency earnings, employment etc
- An important source of cash income to coastal communities

Pharmaceutical value:

- Some species are said to have excellent healing properties (of interest to pharmaceutical industries)

The sedentary nature of sea cucumbers and the ease with which they can be collected has largely contributed to the overfishing of these species. So please.....

***Fish responsibly
and leave some for
your children and
your children's
children***

Prior to 1997.....

- Commercial production of *bech-de-mer* for export was initiated during mid 1980s
- Number of exporters unknown but in 1995, 13 companies were registered with the Ministry of Labour, Commerce & Industries

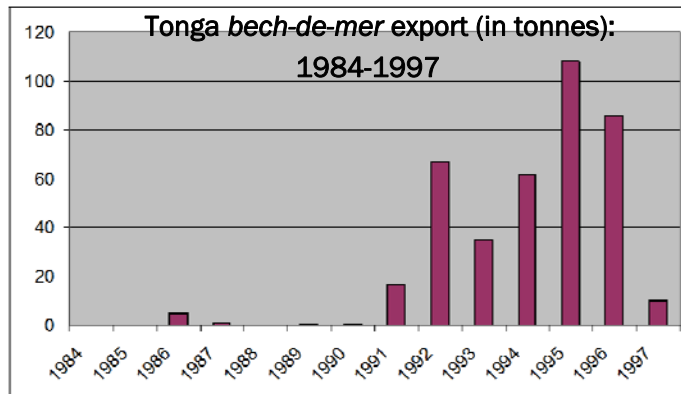
1990: SPC survey in Ha'apai (Preston & Lokani)

Objective: "To assess the potential for *bech-de-mer* fishery and suggest management measures".

Findings: "There were substantial stocks of sea cucumber that could support a small fishery". Discouraged the use of underwater breathing equipment in fishing to protect brood stock that existed in deeper waters for the white teatfish. Monitoring of the fishery was encouraged.

1996: SPC survey in Ha'apai (Lokani, Matoto & Ledua)

Objective: To estimate the present level of fished stocks and compare it with the pre-fishing estimates of 1990.



Recommendations:

1. That a 10-year moratorium be imposed on harvesting to let sea cucumber stocks recover to sustainably manageable levels, effective immediately
2. Ban use of under water breathing apparatus

Sept 1997: Cabinet approved a 10 year moratorium imposed on harvesting of sea cucumbers for export over the whole of Tonga, effective from 31st Dec 1997, to be subjected to review by the Ministry after 5 years

Estimated FOB value for 1995, 1996 and 1997 were \$1,156,782.60, \$884,923.50 and \$65,651 respectively

February 2003: Cabinet reaffirms its decision on Sept 1997

2004: SPC survey (Friedman)

Findings: There appears to be potential for reopening the fishery. Ha'apai held only moderately abundant stocks despite the 7 year moratorium.

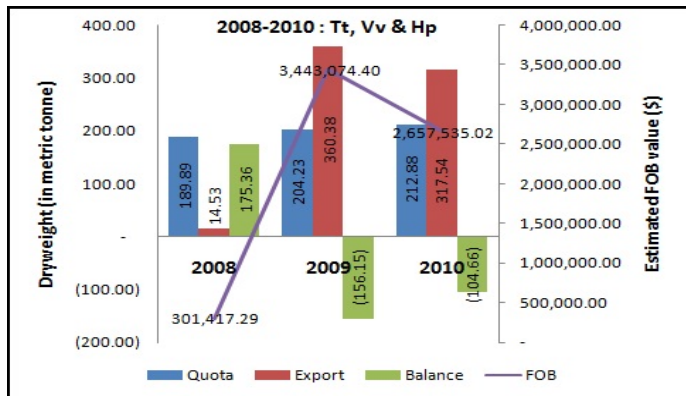
During the moratorium period, data from the overseas market indicate

31 DEC 1997—31 DEC 2007 : 10 YEAR MORATORIUM

illegal trading of *bech-de-mer* from Tonga continued.

Illegal fishing and export of marine resources such as sea cucumber hinders economic development of Tonga because it places the sustainability of the stock at risk. It undermines the integrity of the measures put in place for the **conservation, management, sustainable utilization and development** of any fishery.

In late 2008, the sea cucumber fishery in Tonga was reopened. A snapshot is presented below.



Our responsibility is "...conservation, management, sustainable utilization and development of fisheries resources in the Kingdom and the fisheries waters" FMA 2002 section.3

The objective of the Sea Cucumber Management & Dev. Plan states that "it requires a strong management strategy and commitment from all responsible sectors to ensure optimum utilization of sea cucumber for commercial development but all in a sustainable manner because of the need to conserve aquatic living resources in the marine environment for present and future generations"

Main Management Measures adopted:

1. Closed Seasons (1 Oct—31 March)
2. Species size limit
3. Ban SCUBA diving & hookah apparatus
4. Limited quota
5. Limited license

For more information, see Fisheries Management (Conservation) Regulations 2008

2008: SEA CUCUMBER FISHERY REOPENED

4 Feb 2008: Tonga National Sea Cucumber Fishery Management and Dev. Plan approved

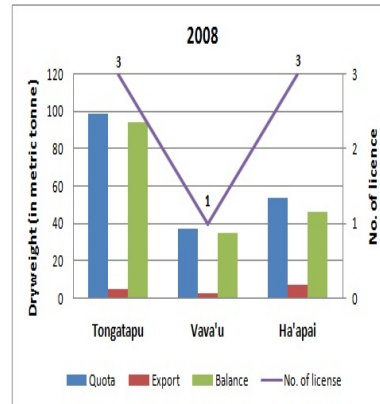
July 2008: Fisheries Management (Conservation) Regulations 2008 adopted

Aug 2008: 8 Licenses issued but only 7 were operational. License issued for operator from Ntt wasn't operational.

Illegal Fishing: About 1.5 tonne of *bech-de-mer* was confiscated in 2008 for illegal processing with-

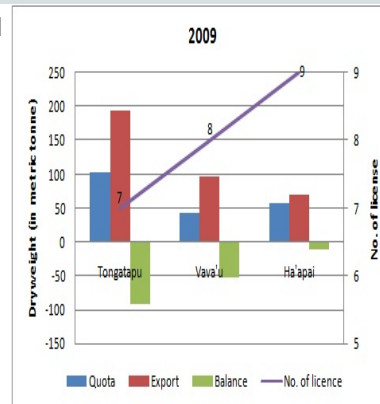
out a license. It was sold, adding T\$98,792 to Government revenue.

2008 contribution estimated ~ \$2million *pa'anga*



Is Tonga reaping maximum economic benefit from this fishery?

- More than 50% of total export from Tt were Snakefish (a subsistence target species)
- Consequence -> Food security concern for the people of Tonga, especially those in the coastal communities
- No known/prosecuted illegal cases for 2009



Nov 08—Mar 09: Fisheries Division resource assessment (Ngaluafe et al)

- Proposed: 14 licenses with allocated quotas
- Issued: 27 export licenses (shown in 2009 graph + 2 Minerva & 1 Ntt) -> exceed quota
- Harvest season was extended until Dec
- Highest export production year
- Export indicated a shift from high to low value species

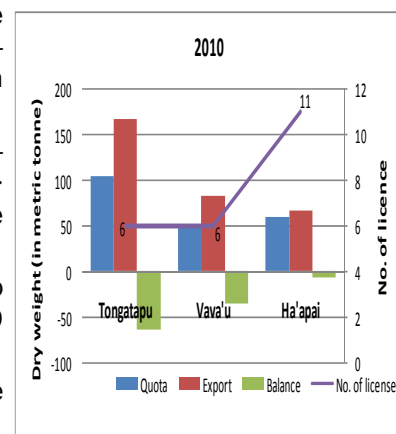
• 2009 contribution estimated ~ \$12 million *pa'anga*

2010:

- Dominant export species were the most abundant species common at the intertidal area eg. Snakefish and Lollyfish (both subsistence species)

2010: DOMINANT EXPORT SPECIES WERE THE SUBSISTENCE TARGET SPECIES

- Supporting evidence that high value species show overall sign of depletion
- Total of 23 export licenses issued -> exceed total allowable quota
- 11 licences issued to Ha'apai but only 9 were operational
- Total export decrease compared to 2009
- Illegal case added T\$14,025.63 to Government revenue



Nov. 2010—Mar 2011: Fisheries Div. resource assessment of Tongatapu & Vava'u concluded that "...the sea cucumber fishery in Tongatapu and Vava'u are experiencing overfishing".

Limited resources prevented assessment of the Ha'apai area.

It is intended that a small quota of about 100mt will be allowed for export in the 2011 season.

- 2010 contribution estimated to be ~ \$12 million *pa'anga*