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Trade and management of marine aquarium fish in the Pacific

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Introduction



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- Importance of aquarium trade in the Pacific Islands
- Characteristics of the trade
- Data availability
- Priority needs for management
- Organisational structures to support sustainable aquarium fisheries
- Key messages

The Pacific



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Aquarium products in the Pacific Islands: A review of the fisheries, management and trade



Importance: economies



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Annual free-on-board value of the aquarium trade in the Pacific Islands region is approximately USD 7.4 million (2019)

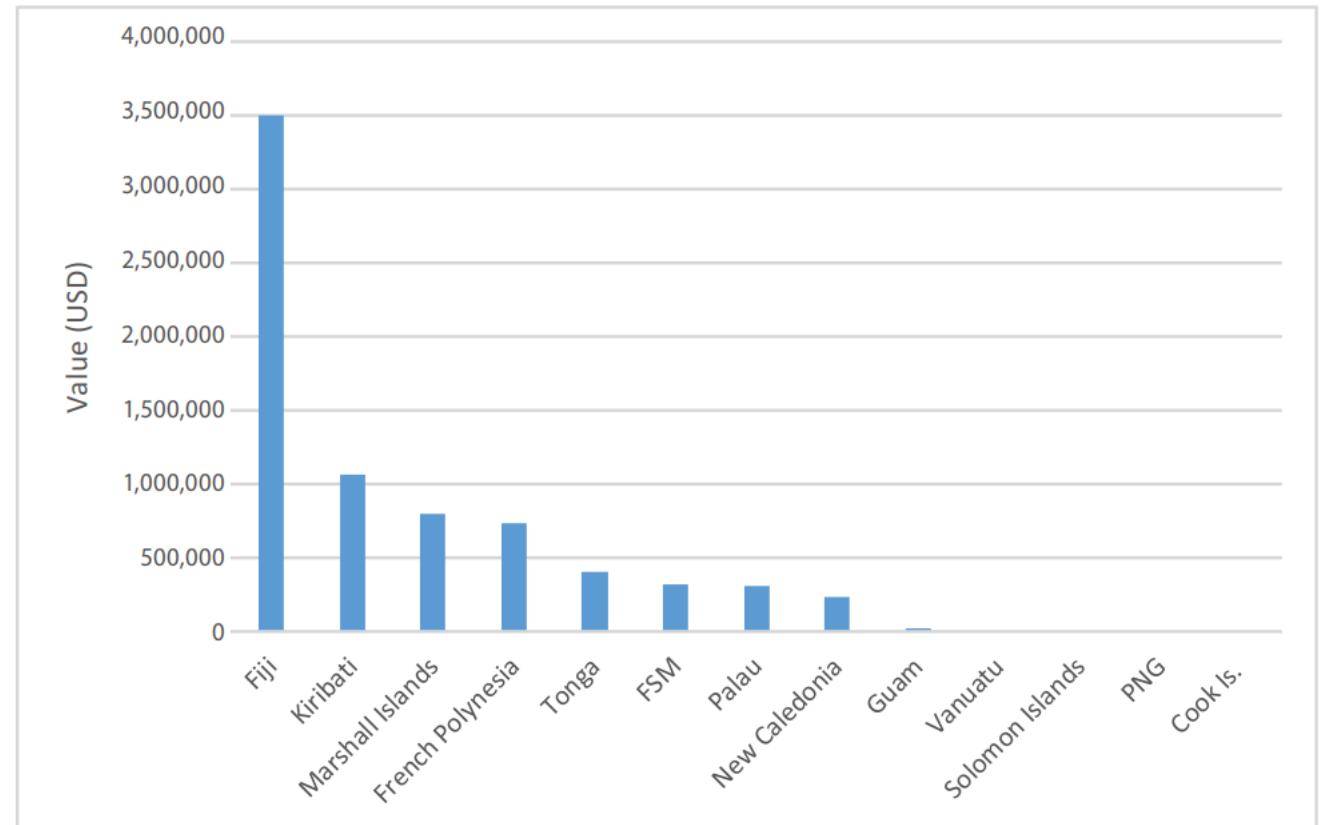


Figure 1: Annual value of exports of aquarium products from PICTs

Importance: livelihoods



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- Creation of employment in areas where opportunities are scarce.
- Mixed of skilled and unskilled work opportunities.
- Mix of men and women involved in the trade.



In Kiritimati, The husbands dive and the ladies take care of packaging and administrative duties

History



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- 1970s: FSM, French Polynesia, Fiji, Kiritimati island (Kiribati)
- 1980s: Cook Islands, New Caledonia, Marshall Islands, Tonga
- 1990s: Vanuatu, Palau
- 2008-2012: PNG
- 2015: Solomon Islands stops exports
- 2016: Cook Islands ceases exports
- 2018: Vanuatu stops exports
- 2018-2022: PNG

Who is involved in trade?



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- Eleven countries have active aquarium trade: FSM, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, New Caledonia, Palau, PNG, Tonga and Solomon Islands.
- Most PICTs involved in the aquarium trade are parties to CITES, except Cook Islands, Kiribati and RMI.
- 34 companies active in the region as of late 2019
- COVID impacted trade significantly.



Sorting fish in state of the art facility

What is traded?



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Table 3: Types of marine aquarium products exported in significant quantities in recent years

	Cultured				Wild harvest			
	Fish	Corals	Tridacna	Live rock	Fish	Corals	Tridacna	Other invert
Cook Islands	0	0	0	0	0	0	0	0
FSM	0	✓	✓	0	0	0	0	0
Fiji	0	✓	0	✓	✓	✓	0	✓
French Polynesia	0	0	✓	0	✓	0	✓	✓
Guam	0	0	0	0	✓	0	0	0
Kiribati	0	0	✓	0	✓	0	0	0
Marshall Islands	0	✓	✓	0	✓	0	0	✓
New Caledonia	✓	✓	0	0	✓	0	0	0
Palau	✓	✓	0	0	0	0	0	0
PNG	0	0	0	0	✓	✓	0	0
Solomon Islands	0	0	0	0	✓	0	0	0
Tonga	0	✓	✓	0	✓	✓	0	✓
Vanuatu	0	0	0	0	0	0	0	0



Restarted since 2019
review

Aquarium products in the Pacific Islands:

A review of the fisheries,
management and trade



What is traded?



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- There are iconic fish species that are exported from the Pacific Islands region.
- PICTs have a specific target mix of species that are easily found and collected. Those species usually show fast recruiting trends allowing sustainable collection.
- For example:
 - Flame angels are iconic in the Northern Pacific (Kiribati and RMI)
 - Achilles tangs are popular and common in French Polynesia
 - Flame hawk and Scotts wrasses in Tonga
 - Blue tangs from Solomon Islands and PNG



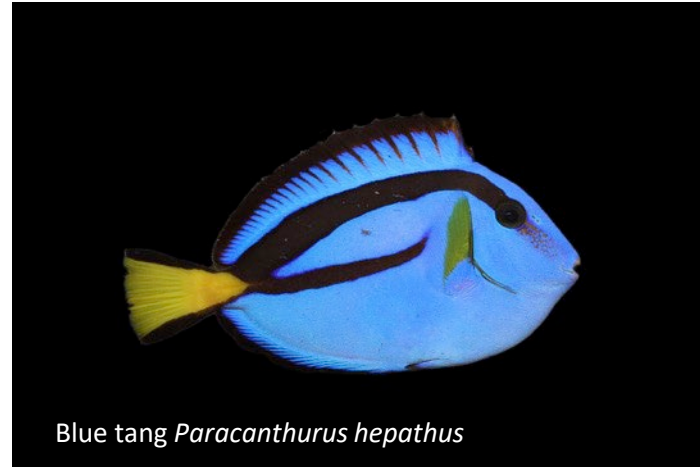
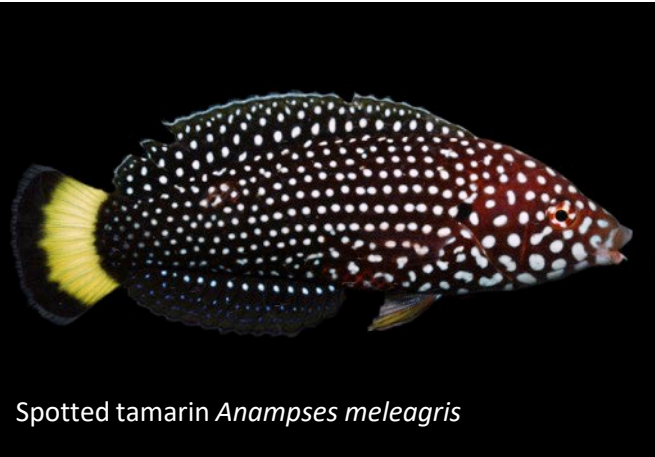
Some examples



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Characteristics of the trade



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- All fish are hand collected with little to no impact on the habitat.
- Relatively short supply chain – collected one week and shipped the next
- Fish mostly collected from small, discrete areas, no nationally distributed fishing activity.
- Export quantities remain relatively stable over time: drivers include air freight availability, economic shocks, diver availability, trends in demand.

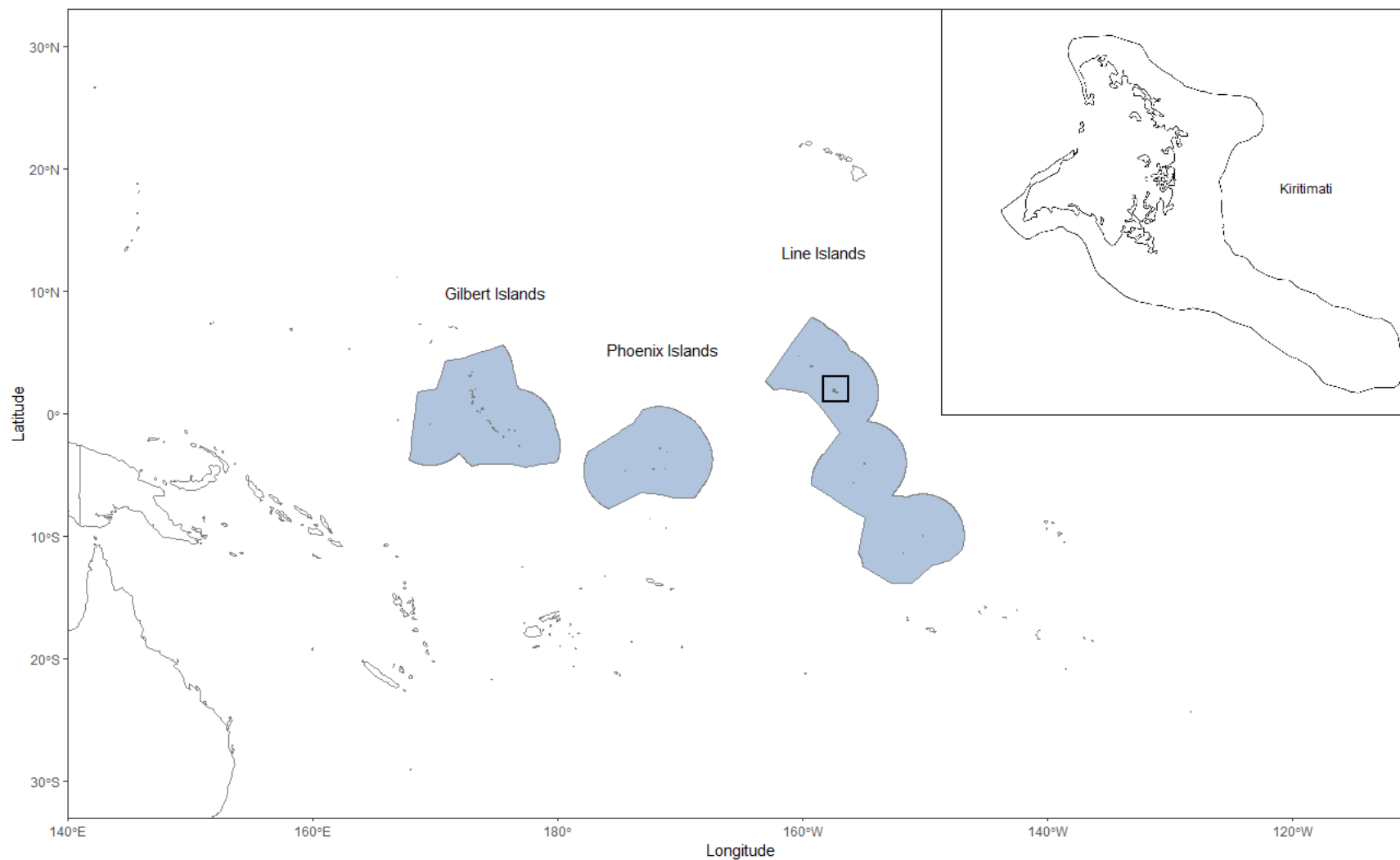
Case study: Kiritimati



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Case study: Kiritimati



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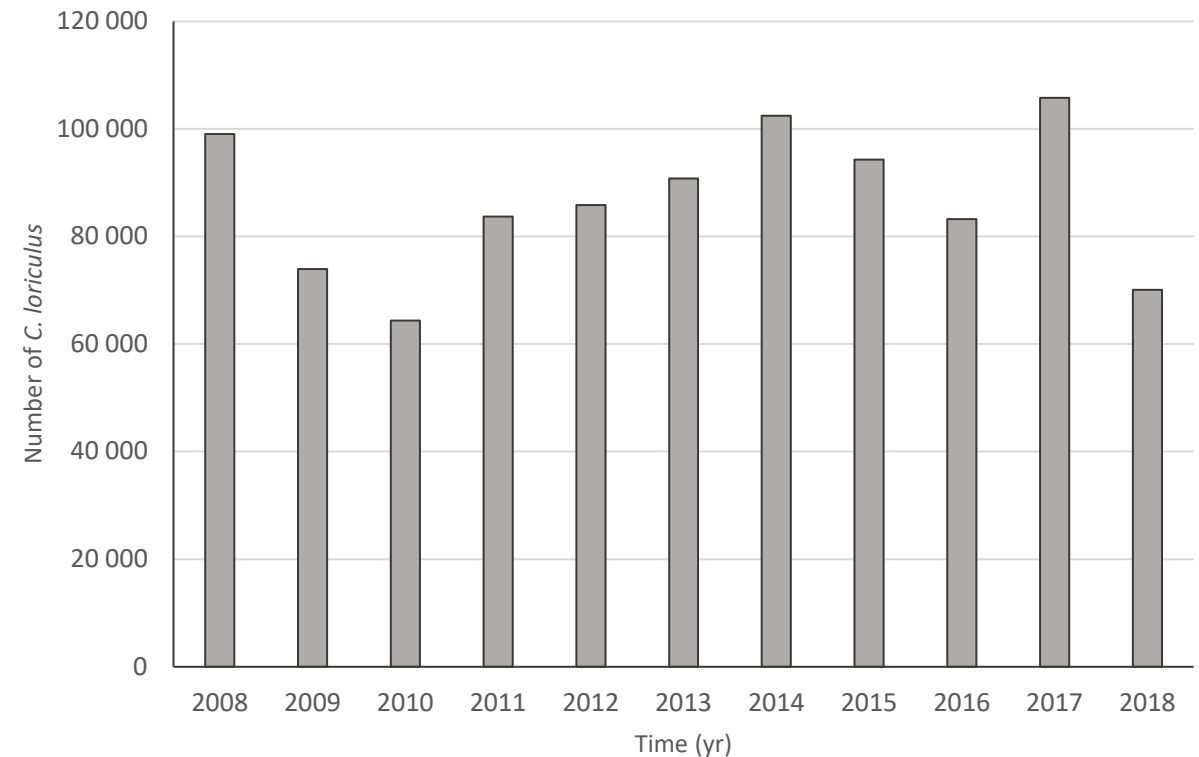
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64 species exported, <1000 individuals exported for 48 of these species



Flame angelfish
Centropyge loriculus

- Comprise 64% of individuals exported between 2008 and 2018
- Mean 86,669 fish exported per annum
- No real trend in export numbers over time
- Covid-19 closed fishery 2020-2023



Source: Kiribati Ministry of Fisheries and Marine Resource Development

Management measures



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- Recent plans or those in draft form currently:
 - PNG - Marine Aquarium Fishery Management and Development Plan 2022
 - Marshall Islands – MAF Regulation 2015
 - Tonga Plan 2019-2021 – under review
 - Kiribati – draft plan currently under review, not yet endorsed
 - Vanuatu 2008-2013: reviewed, plan submitted for the period 2017-2022
- Examples of management measures used in the region include:
 - Limits to number of export licenses
 - One operator per area policy
 - Quota systems for corals and fish
 - Blacklists and whitelists of species for exports

- Reporting requirements for exporters are included in management plans where they exist.
- SPC hosts a regional database set up in the early 2010s, however few countries continue to contribute to it consistently.
- Every live fish export operation produces export data. Opportunity to **harmonise and make use of this existing data.**

Coastal Fisheries Applications

Navigate ▾ Projects ▾ Tools ▾ Help ▾



LearnFishID
Learning species



Field surveys
Data entry & analysis



Market surveys
Data entry & analysis



Landing surveys
Data entry & analysis



Fisher logbooks
Data entry & analysis



Socio Economic surveys
Data entry & analysis



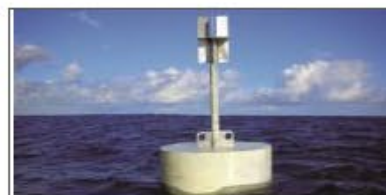
Aquaculture
In development



Data depository
Discover datasets



REEFLEX
Pacific Law & Policy Database



FADs
Fish Aggregating Devices



Exports monitoring
Permits by shipment



Monitoring, Control
& Surveillance



Biological sampling
Biological sample data



AI Service
Photo processing

Priority needs



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- Finalise management plans where they remain drafts, and review those that are now out of date. Ensuring that management plans are simple enough to implement and enforce.
- Improve data systems for monitoring aquarium fishery catch and exports.
- Fill gaps in regional knowledge:
 - Build understanding of species in trade and export volumes
 - Create up-to-date profiles of the aquarium trade for each country
 - Examine country specific fish exports and identify which may be of concern for CITES listing in consultation with Pacific stakeholders.

Organisational structures



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- SPC (Pacific Community) – gives support to scientific authorities
- SPREP (Pacific Regional Environment Programme) – gives support to management authorities
- National governments
 - Fisheries agencies often designated as scientific authorities
 - Environmental agencies often designated as management authorities.
- FAO – reviews proposals for listing aquatic species on CITES Appendices

Key Messages



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- Aquarium fish exports in the Pacific Islands region have been ongoing for the last 50 years and makes significant contributions to national economies and community livelihoods.
- Consolidation of data concerning aquarium trade and updating of management plans are needed.
- Assessments on aquarium fisheries in each PICT is required highlighting dynamics of trade (volume and value) and priorities for further management if required.