

Tonga Marine Aquarium Fishery Management and Development Plan 2020- 2021



Prepared by the Tonga Ministry of Fisheries with assistance from the Pacific Community

March 2020

Contents

FOREWORD	4
ABBREVIATION	6
DEFINITION	6
1 BACKGROUND	7
1.1 Origin, context and purpose	7
1.2 Commencement.....	7
2 SCOPE AND GOAL.....	7
3 INSTITUTIONAL, LEGISLATIVE AND POLICY CONTEXT	8
4 GUIDING PRINCIPLES.....	9
5 OBJECTIVES, STRATEGIES, ACTIONS AND INDICATORS.....	9
6 MANAGEMENT MEASURES.....	12
6.1 Marine aquarium operator requirement.....	12
6.1.1 Harvesting, processing and exporting.....	12
6.1.2 Limit on number of licenses.....	13
6.1.3 Export permit	13
6.2 Prohibitions.....	13
6.3 Restrictions on collection methods and areas.....	14
6.4 Catch limits per licensed operator	14
6.5 Monitoring and reporting requirement.....	15
6.6 Penalties.....	15
7. AUTHORITIES, ROLES AND RESPONSIBILITIES.....	15
8 OVERVIEWS OF THE MARINE AQUARIUM TRADE FISHERY IN TONGA.....	15
8.1 Status and history	15
8.2 Characteristics of the fishery	16
8.3 Target species and composition	17
8.4 Production.....	18
9 MISCELLANEOUS.....	18
9.1 Amendments and review.....	18
9.2 Implementation	18
9.3 Monitoring, Evaluation and Learning.....	18
10 APPENDICES	19
Appendix A: Terms and Conditions.....	19
Appendix B: Fees in TOP	24
Appendix C: The Process for Advertising, Applying, Reviewing and Issuing Licenses to Fish and Export Marine Aquarium Fish	25

Appendix D: Marine Aquarium Logsheet.....	29
Appendix E: Code of Practice for Packing and Export of Marine Aquarium Fish.....	31
Appendix F: Coordinates and maps of special management areas and habitat reserve	33
Appendix G: Marine aquarium harvesting zones	41
Appendix H: AUTHORITIES, ROLES AND RESPONSIBILITIES	44
Appendix I: Harvest control process for monitoring the harvest of the marine aquarium species.	45

FOREWORD

Tonga is a small island developing state with limited land and natural resources. It is however blessed with a vast ocean with an array of fisheries resources. As such, the sustainable development, management and utilization of such resource form the fundamental and core existence and mandate of the Ministry of Fisheries, so that the benefits accruing from the utilization of such resources flow directly to the people of Tonga.

The development and utilization of a group of fisheries resources make up the marine aquarium fishery. The fishery, utilized sustainably over the last 28 years, continues to contribute to the social and economic development of Tonga providing jobs and economic returns to the people since its establishment in the country. It is a small fishery with five companies, all of which are locally owned. The average annual export value that the fishery brings into Tonga in one year is about TOP670,000 over the last decade.

The Tonga Marine Aquarium Fishery Management and Development Plan 2020-2025 is developed to ensure that this fishery continues to be of benefit to the people into the future by providing formal guidance for the long-term sustainable utilization, management and development of the fishery in Tonga. The plan draws and builds upon the successes of the expired plan (2017- 2019) and clearly outlines the objectives, strategies and actions to be implemented to ensure sustainability. The plan also contains important management measures that will ensure compliance with the plan. Overall, the goal of the plan is to ensure ecological sustainability through effective management and sustainable utilisation of marine aquarium fishery, in order to create social and economic benefits that contribute to improving the livelihoods of Tongan people.

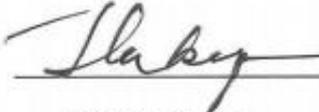
This plan has a lifespan of one year (2020- 2021), and also serves as a vehicle of information dissemination on the fishery to encourage transparent communication, to promote close collaboration and partnership with the Ministry and its stakeholders, including the marine aquarium operators, government line ministries, communities and other interested stakeholders.

I would like to acknowledge and thank the Pacific Community (SPC) and the New Zealand Ministry for Primary Industries (MPI) for their technical guidance towards the review and updating of this plan and the staff of the Ministry and stakeholders who have put a lot of effort and time towards the preparation of this plan.

It is, therefore, my pleasure to present this plan to the Government, the people of Tonga, and marine aquarium fishery stakeholders and to invite and urge all to use this plan to work together for the common good of the fishery and to the current and future generation of the people of the Kingdom of Tonga.

APPROVAL OF THE TONGA MARINE AQUARIUM FISHERY MANAGEMENT AND
DEVELOPMENT PLAN 2020-2021

This Tonga Marine Aquarium Fishery Management and Development Plan 2020-2025 is produced to be used in accordance with Part II, Section 7(1) and 7(5) of the Fisheries Management Act 2002.


Lord Tu'ilakepa
Minister for Fisheries



M

ABBREVIATION

Acronym	
CEO	Ministry of Fisheries Chief Executive Officer
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
FCD	Fisheries Compliance Division
IATA	International Airline Transportation Association
MAMC	Marine Aquarium Management Committee
MOF	Ministry of Fisheries
SCUBA	Self- contained underwater breathing apparatus
SPC	Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
TOP	Tongan pa'anga
UBA	Underwater Breathing Apparatus

DEFINITION

Word	Definition
Act	Refers to the Fisheries Management Act 2002
Live rock	refers to an assemblage of living organisms attached to a hard substrate (including dead coral or rock, usually calcareous in nature) as per Fisheries Management (Conservation) Regulations 2008
Marine aquarium fish	include hard corals, soft corals, small invertebrates and aquarium fish, as per Fisheries Management (Conservation) Regulations 2008
Minister	refers to the Minister responsible for Fisheries
Secretary	refers to the Chief Executive Officer of the Ministry of Fisheries

1 BACKGROUND

1.1 Origin, context and purpose

The Tonga marine aquarium fishery is a designated fishery. Over the last three years, the management and development of this fishery were guided by the *Tonga marine aquarium fishery management and development plan 2017- 2019*. This plan expired by the end of 2019, hence the review and adoption of this newly revised plan (2020- 2021).

This plan draws and builds upon the expired plan using lessons learnt on the successes and challenges faced in the implementation of the plan. Some of the key successes include making sure strategies and measures under the plan are adhered to, such as limiting the number of licences to five as required by the plan, providing employment for locals, trialling of the small boat device (vessel monitoring system) for the monitoring of aquarium boats, and promoting better collaboration and partnership between government and licensed operators through utilisation of the Ministry of Fisheries facilities for packing by the aquarium operators.

Key challenges included the need for better and more effective communication within the Ministry and between the Ministry and its stakeholders for better and effective implementation of the plan and the need for capacity building both for the ministry staff and stakeholders. Ministry staff needs capacity building in areas of conducting an economic study on the fishery and communities need training on farming of aquarium products such as clams and corals and on collection methods. Other critical key lessons learnt was that the period of the plan (3 years) was too short, as a result, a couple of strategies were not able to be implemented, while some have been implemented but not fully. Secondly, it puts a lot of pressure on the Ministry to focus on the review rather than ensuring full and effective implementation. Overall, large parts of the plan have been successfully implemented but the key challenges identified will be addressed under this revised plan.

Over the last 28 years since its establishment in Tonga, this fishery has contributed to the country's social and economic development. Based on this, the Ministry of Fisheries intends to continue to ensure its sustainability.

Therefore, the purpose of this plan is to provide an effective and enforceable management framework that will ensure long term social and economic benefits to Tonga from the marine aquarium fishery.

1.2 Commencement

The Plan will take effect one month after the endorsement by the Minister of Fisheries.

2 SCOPE AND GOAL

Scope

The Plan has been prepared in accordance with Part II, section 7 of the Fisheries Management Act 2002.

The Plan supplements, and does not in any way override, the provisions of the Act or regulations promulgated under the Act. All activities subject to the Plan will be subject to the applicable provisions of all Acts and Regulations of Tonga:

- 1) The Plan applies to any wild-caught fish, invertebrates, live corals and substrates (known collectively as marine aquarium fish) that are collected within Tonga's fisheries waters, and sold and/or exported live for the marine aquarium trade;
- 2) This Plan applies to all forms of collecting (as well as farming and farm facilities) for holding live marine aquarium fish, and includes handling, packing, transporting and shipping marine aquarium fish;
- 3) Appendices to this Plan form part of the Plan and should be read together with the Plan;
- 4) The Plan is to be interpreted in accordance with the Definition section above and section 2 of the Act.

Where there is any inconsistency between the Plan and the Act, the Act shall prevail.

Goal

The goal of this Plan is to ensure ecological sustainability through effective management and sustainable utilisation of marine aquarium fishery, in order to create social and economic benefits that contribute to improving the livelihoods of Tongan people.

3 INSTITUTIONAL, LEGISLATIVE AND POLICY CONTEXT

Tonga Ministry of Fisheries (MOF) is the primary government agency mandated under the Act to manage and develop the marine aquarium fisheries in Tonga. Others who have a role to play include the Department of Environment and Department of Customs.

The main legal instrument for the management and development of the fishery in the Kingdom is the Fisheries Management Act 2002 (the Act). The Fisheries Management (Conservation) Regulations 2008 provide the regulatory framework for the effective implementation of the plan.

Other relevant legislative instruments that contribute to the sustainable management and development of the aquarium fisheries include the Fisheries Management (Processing and Export) Regulation 2008, Environment Management Act No.27 of 2010 and the Animal Diseases Act 1978.

Regional and international instruments such as CITES will also play key roles in aquarium management and development in the Kingdom.

This Plan is developed in line with higher national overarching policy documents such as the Tonga Strategic Development Framework 2015- 2025 (TSDFI) and MOF policies and strategies such as the Tonga Fisheries Sector Plan 2016-2024 (TFSP) and Ministry of Fisheries Corporate Plan Financial Year 2019/2020-2020/2021. This Plan will form the basis of operationalizing aquarium related goals under those overarching policies.

4 GUIDING PRINCIPLES

The following guiding principles and values will support the development and implementation of the plan.

The following guiding principles and values will support the development and implementation of the plan.

1. development of the plan.
2. Strengthen partnership and networking with all stakeholders which consists of operators, national, sub-national, regional and sub-regional levels.
3. Promote good governance, best practice and accountability in the management and sustainable development of the Aquarium Fisheries.
4. Support community-based management, co-management and capacity building as well as the motivation and empowerment of the communities.
5. Recognise the economic viability of the Aquarium Fisheries and its contribution to the development of Tonga

5 OBJECTIVES, STRATEGIES, ACTIONS AND INDICATORS

This plan contains six objectives supported by eight strategies and 24 actions. It is intended that the effective implementation of the 24 actions will contribute to achieving the six objectives and the overall goal of the plan. This table forms the key element of the plan.

Table 1: Objectives, strategies, actions and indicators for the plan

Promote ecosystem-based approaches to fisheries management to ensure a complete approach to decision making taken with respect to the management and

Strategy	Action	Indicators
Objective 1: To strengthen monitoring and management measures for the sustainable utilisation of marine aquarium fishery resources		
1.1 To improve the level of compliance on the management measures in place	1. Implement and monitor management measures for harvesting, packing and exporting marine aquarium fish	<ul style="list-style-type: none"> Number of compliant activities
	2. Restrict utilisation of the marine aquarium fish by controlling the number of harvesting and exporting licences	<ul style="list-style-type: none"> Not more than five (5) licences should be issued at any one time
	3. Ban the export of wild live rock and wild giant clam and restrict the exportation of only cultured specimen	<ul style="list-style-type: none"> No records of wild live rock and wild giant clam on export records Ban of export of wild giant clam adopted
	4. Introduce spot fine	<ul style="list-style-type: none"> Process of spot fine established/developed in 2021
1.2 To improve the level of monitoring of the aquarium trade fishery	5. Monitor and report on marine aquarium operators' compliance with a management framework	<ul style="list-style-type: none"> Improved data management of harvest and export data
	6. Conduct a resource assessment, including non-detrimental findings for corals, to use the best available scientific data	<ul style="list-style-type: none"> Resource/stock assessment conducted by the end of 2020 Stock assessment report
	7. Explore the process for registration and licensing of vessels operating in the Marine Aquarium fishery	<ul style="list-style-type: none"> Register and License of aquarium boats developed and in place -Process of registration and licensing developed and in place for use in January 2021
	8. Continue implementation of small boat tracking device (vessel monitoring system) trialled recently	<ul style="list-style-type: none"> All aquarium vessels installed (tracking device) within 2020 and monitored continuously
	9. Continue to explore appropriate and affordable technology for monitoring aquarium fishery vessel operations	<ul style="list-style-type: none"> Trials on other potential tracking devices
Objective 2: To ensure that the marine aquarium fishery is economically viable		
2.1	10. To undertake regular economic assessment and analysis on the status of the resource	<ul style="list-style-type: none"> Status of the resource to be analysed on a quarterly basis Status assessment reports
	11. Continue to implement guidelines for a Code of Practice ¹ for harvesting, packing and exporting marine aquarium fish	<ul style="list-style-type: none"> Code of practice is understood and practised by all operators when

¹ Appendix E: Code of Practice for packing and exporting Tonga's marine aquarium fish based on Ecological Reef Company Ltd, which has offered to be included in this plan.

		undertaking harvest, packing and/or exporting activities.
	12. Provide ongoing support to aquarium operators on the facility for holding and packing of marine aquarium fish	<ul style="list-style-type: none"> Packing facilities established for marine aquarium operators to use.
Objective 3: To ensure that the marine aquarium fishery contributes to the livelihoods of people in Tonga.		
3.1 To ensure Tongan coastal communities' benefit from the fishery	13. Create employment opportunities for Tongan coastal communities in the fishery	<ul style="list-style-type: none"> Number of coastal community members employed in the fishery
	14. Conduct training of the marine aquarium operators and Tongan coastal communities on farming of marine aquarium products or on fish and invertebrate's collection methods	<ul style="list-style-type: none"> Number and types of training conducted. At least 2 training per year.
Objective 4: To make sure that people of Tonga understand the benefits and contribution of the marine aquarium fishery to Tonga's development		
4.1 To strengthen awareness and understanding of the marine aquarium fishery	15. To conduct regular awareness on the social and economic benefits and contribution of the fishery to Tonga's development and on general information on the fishery	<ul style="list-style-type: none"> Number and means of awareness conducted
	16. Public and stakeholders are informed on the development and management decisions on the fishery	<ul style="list-style-type: none"> Number and means of engagement with stakeholders
Objective 5: To promote communication, collaboration, partnership and networking with stakeholders		
5.1 To ensure an effective participatory approach to fisheries management of the fishery	17. Undertake regular meetings of the Marine Aquarium Management Committee (which includes government, fishers and the industry), with clearly defined roles to co-manage marine aquarium fish	<ul style="list-style-type: none"> Number of meetings MAMC meets quarterly a year.
	18. Undertake and maintain regular communication and engagement with stakeholders, line ministries and communities	<ul style="list-style-type: none"> Number and means of communication and engagement
	19. Establish collaboration, partnership and networking with key stakeholders	<ul style="list-style-type: none"> Number of meetings, emails and working arrangements such as MOUs/MOAs
	20. To develop and implement a community program that addresses community interests to engage in farming of aquarium products	<ul style="list-style-type: none"> Community program develop and implemented At least more than three communities show interests to engage in farming aquarium products.
Objective 6: To ensure capacity development in the fishery		
6.1 To establish and strengthen capacity for the participation in the fishery	21. Undertake community training on farming of aquarium products such as giant clam, live rock and corals	<ul style="list-style-type: none"> Number and types of training conducted
	22. Provide training opportunities for marine aquarium operators (and all employees operating under that licence) on using best practice for harvesting and packing marine aquarium fish	<ul style="list-style-type: none"> Number of training opportunities available Percentage of employees in marine aquarium companies is trained to harvest and pack

		marine aquarium species. At least 50% percent of marine aquarium operators understand and use best practice for harvesting and packing marine aquarium fish.
6.2 To strengthen capacity in the management and development of the fishery	<p>23. Identify and provide training on the social; ecological (Marine Aquarium species identification) and economic aspect of the fishery</p> <p>24. Refresher trainings for MOF staff on the management measures.</p>	<ul style="list-style-type: none"> • Number of trainings identified • Number of staffs trained

6 MANAGEMENT MEASURES

6.1 Marine aquarium operator requirement

6.1.1 Harvesting, processing and exporting

- a. No person or company shall harvest or export marine aquarium fish for commercial purposes without authorisation by the Ministry of Fisheries Chief Executive Officer (CEO), issued in the form of a licence.
- b. Licence terms and conditions (Appendix A) will be used to control the harvesting, purchasing, packaging and exporting of marine aquarium fish.
- c. Licence fees apply (Appendix B);
- d. A licence to fish for marine aquarium fish shall be issued for a one-year term, which shall be subject to annual reviews and payment of annual licence fee (Appendix B). This licence is not transferable. Licences will not be issued unless the required fees are paid. Appendix C is a step-by-step process to follow for granting licences and permits to fish for and export marine aquarium fish;
- e. If a vessel is used during the harvesting of marine aquarium fish, that vessel must be licensed in accordance with the Act and Fisheries (Local Fishing) Regulations 2009 (the Local Fishing Regulations);
- f. A Marine Aquarium Fish Log Sheet (Appendix D) must be completed by the licensed operator and provided to the Ministry of Fisheries 24 hours after the day the fishing occurred. If this form is not provided, export permits will not be issued;
- g. Any fish processing establishment used for marine aquarium fish must comply with part 4 of the Fisheries Management (Processing and Export) Regulations 2008; The Code of Practice for Packing and Exporting of aquarium fish (Appendix E) shall provide guidance to exporters;
- h. Licence holders will allow and assist any observer and/or authorised officer to carry out their duties, including the inspection of any harvesting activities, holding, processing and packing facilities, consignments destined for export, reporting log forms, the taking of photographs and the collection of specimens if, and where, necessary.

6.1.2 Limit on number of licenses

- i. The maximum number of marine aquarium operators in Tonga is limited to five current operators as per Cabinet Decision No.399, 1997.
- j. Tongatapu is to remain as the only permitted area for harvesting.

6.1.3 Export permit

- a. Operators can refer to the Code of Practice for Packing and Exporting of aquarium fish (Appendix E) shall provide guidance to Exporters.
- b. Upon submitting an Aquarium Export Log Sheet, an Export Permit issued by the Ministry of Fisheries is required for each shipment of marine aquarium fish. The Aquarium Export Log Sheet must list all species and quantities, their destination, and other information as requested by the Ministry of Fisheries and the importing country:
 - I. *Coral Export Permit*: A Coral Export Permit is to be obtained from the Ministry of Fisheries for each shipment of corals and must list all species and quantities, their destination and other information as requested by the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), the International Airline Transport Association (IATA) and the importing country; and
 - II. *Giant Clam Export Permit*: A Giant Clam Export Permit is to be obtained only for cultured specimen from the Ministry of Fisheries for each shipment of giant clams and must list all species and quantities, their destination and other information as requested by CITES, the IATA and the importing country
- c. Each shipment must comply with relevant IATA regulations and standards for the transport of live animals.

6.2 Prohibitions

- a. Harvesting or exporting of wild live rock is prohibited as per section 30 (d) of the Fisheries Management (Conservation) Regulations 2008.
- b. Harvesting and/ or export of wild giant clam shall be prohibited
- c. Harvesting of cetaceans as per section 16 of the Fisheries (Conservation) Regulations 2008 (the Conservation Regulations) is prohibited. The export of these species is also prohibited;
- d. Harvesting or exporting bumphead parrot fish (*Bolbometopon muricatum*), humphead wrasse (*Cheilinus undulatus*), giant grouper (*Epinephelus lanceolatus*), sharks, rays, triton or turtles is prohibited;
- e. Collecting marine aquarium fish within, or close to, any registered tourist diving sites is prohibited, and a buffer zone of at least 100 metres must be observed;
- f. Collecting marine aquarium fish at night and using underwater lights is prohibited;
- g. Collecting marine aquarium fish using techniques and tools that may harm or destroy the environment (e.g. crowbars, axes, any metal rod, or garden tools such as spades, dynamite) is prohibited, as per section 30 of the Conservation Regulations;
- h. Using, storing and transporting explosives, noxious substances (including cyanide and naturally derived substances in any form) for the purpose of killing, stunning,

stupefying, disabling or capturing marine aquarium fish, per section 17 of the Act, is prohibited;

- i. Collecting food fish, sea cucumber, and invertebrates is prohibited while engaging in the harvesting of marine aquarium fish.

6.3 Restrictions on collection methods and areas

- a. If a marine aquarium operator wants to use self-contained underwater breathing apparatus (UBA) such as scuba, a written authorisation from the Ministry of Fisheries CEO is required. Only certified divers employed by the operator are permitted to use scuba to fish for marine aquarium fish. Copies of dive certificates must be attached to the UBA request. Additional copies of dive certificates must hold at company offices and made available to the Ministry on request. Operators must update the Ministry of any changes to their authorised scuba divers;
- b. Hand scoop nets and aquarium fishery barrier nets are permitted. Aquarium fishery barrier nets must be less than 5.0 m long, 1.5 m high, and with stretched mesh size smaller than 30.0 mm;
- c. Marine aquarium operators must seek permission from the relevant community to grow aquaculture product for the aquarium trade in special management areas;
- d. The export of live rock shall only be permitted for artificially manufactured and seasoned live rock. An export permit and other relevant documentation issued by the Ministry of Fisheries is required for lawful export;
- e. The export of farmed hard corals is permitted for specimens that were grown from a farmed broodstock colony (i.e. F2, a fragment obtained from a colony that itself was reared from a clipping of a wild-sourced coral) and obtained from registered aquaculture operations. An export permit and other relevant documentation issued by the Ministry of Fisheries is required for lawful export;
- f. Collecting marine aquarium fish is prohibited within marine protected areas (e.g. Hakaumama’o Reef; reefs surrounding Malinoa Island; reefs surrounding Mounuafe; Pangaimotu; Ha’atafu reefs) and all fringing reefs of Tongatapu, special management areas, and the Fanga tapu (see Appendix F);
- g. Licence holder shall only fish in the collection zones for aquarium fish shows in Appendix G.

The export of giant clams is permitted for specimens that were grown from broodstock (i.e. grown-out spat obtained from broodstock) from registered aquaculture operations. An export permit and other relevant documentation issued by the Ministry of Fisheries is required for lawful export.

6.4 Catch limits per licensed operator

Table 2: Catch limits per species per operator

Marine aquarium resource	Total allowable catch per licensed operator
Fish	100,000 individual fish per year
Invertebrates	30,000 pieces per year
Live hard coral	50 pieces per week (must be less than 20 cm in length)
Soft coral	5,000 pieces per year
Wild live rock	0 (Prohibited)

Cultured hard coral	Unlimited
Cultured artificial live rock	Unlimited
Cultured giant clam	Unlimited
Wild giant clam	0 (Prohibited)

6.5 Monitoring and reporting requirement

Monitoring will be conducted by the MoF and reporting will be an obligation of license operator’s as per their license condition. Below are some forms that are to be completed and submitted to the Ministry.

Table 3: Types of forms for reporting

Type of form:	Submitted by:	By when:
Marine Aquarium Fish log Sheet (as per section 36, Conservation Regulation) Form 2	Licensed operator	No later than 24 hours after fishing occurred
Aquarium Fish Export Log Sheet (as per section 17, Processing and Export Regulations)	Licensed operator	No later than 24 hours after the export has occurred

A packing list of the previous export must be submitted to the Ministry of Fisheries prior to the Ministry issuing an export permit for the next consignment.

6.6 Penalties

All operators –including all fishers, processors and exporters- must comply with this management Plan as well as relevant regulations and act.

Penalties as per Act, Conservation Regulations and Processing and Exporting Regulations will apply to any non-compliance.

7. AUTHORITIES, ROLES AND RESPONSIBILITIES

The Ministry of Fisheries plays a primary role in promoting conservation, management, sustainable utilization and development of fisheries resources.

The Minister of Fisheries will manage the fishery in cooperation with stakeholders through a co-management approach. Co-management facilitates the sharing of information, promotion of voluntary compliance, and engagement to assist with monitoring the fishery.

The Act (s7(4)) states that there may be a Management committee established for each major fishery in Tonga. The functions and roles of the Marine Aquarium Management Committee (MAMC) are appended in **Appendix H**.

8 OVERVIEWS OF THE MARINE AQUARIUM TRADE FISHERY IN TONGA

8.1 Status and history

The marine aquarium fishery in Tonga has been in operation for the last 28 years, providing economic and social benefits for Tongans. Figure 1 illustrates a snapshot of development in the history of the fishery.

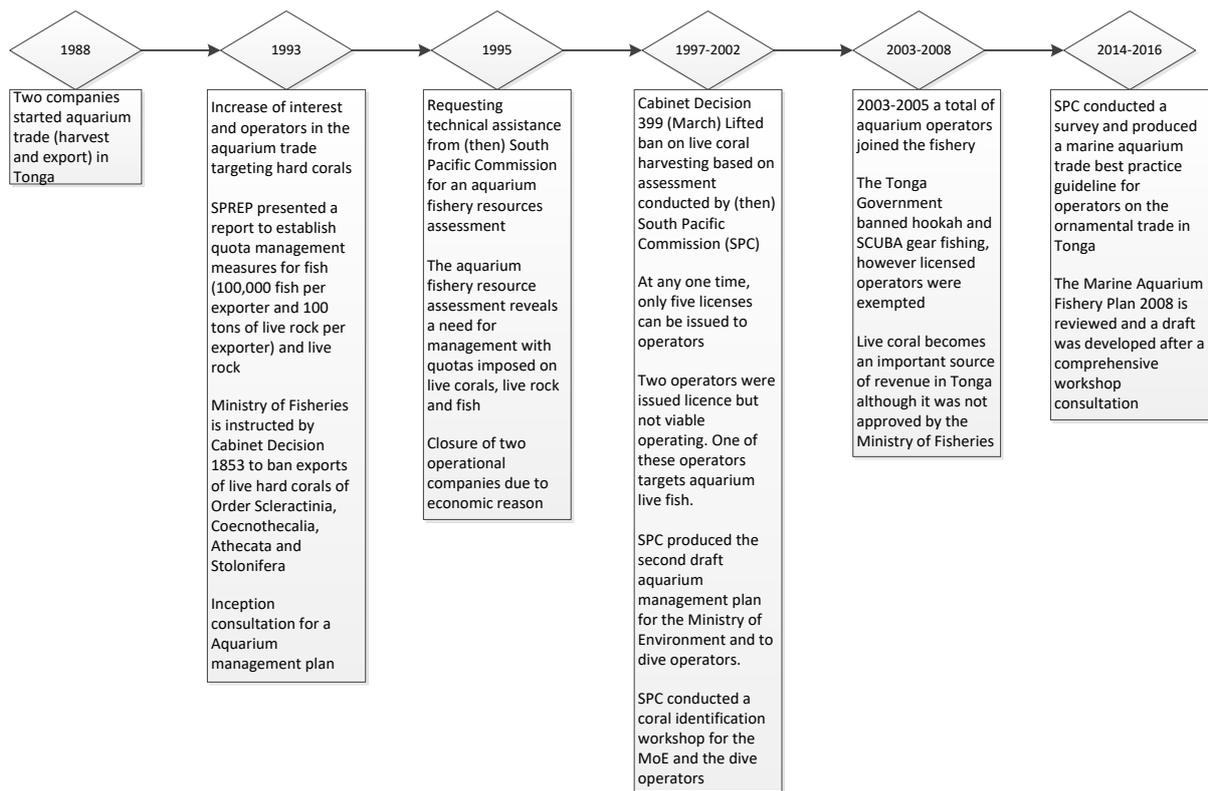


Figure 1: Development history of the marine aquarium fishery in Tonga

8.2 Characteristics of the fishery

Two distinct characteristics the fishery include: 1) the primary use of the “product” is for ornamental purposes rather than for food or medicinal purposes; and 2) the product form is live rather than processed, frozen, dried, smoked, or otherwise preserved.

The fleet composition and size vessel used in the marine aquarium fishery includes open skiffs less than 6 meters in length, usually carrying about two to three crew members, including a boat captain and two divers or collectors.

The two main methods for collecting marine aquarium fish are snorkelling and diving using self-contained underwater breathing apparatus (scuba). Although a number of marine aquarium fish are collected by snorkelling, a large majority is collected using scuba.

For ornamental fish species, divers usually use scuba, hand nets, barrier nets or traps, guiding the fish into the nets or traps using pokers. For corals, live rocks and invertebrates, divers use scuba and collection is usually done by hand.

The collected marine aquarium products are transported and stored in a shore-based facility. The facility consists of a warehouse with various sizes of holding tanks supplied with continuous flowing and aerated seawater.

Ornamental fish, live corals, live soft corals and invertebrates, including giant clams, are packed in plastic bags with sea water and air, and bags are tied using rubber bands. The bags are then packed into Styrofoam boxes ready for export.

8.3 Target species and composition

Target species comprised of small ornamental (inedible) fish, corals, invertebrates and live rocks, occurring almost exclusively in less than 40 meters depths in inshore and surrounding reef habitats.

The marine aquarium fishery is currently restricted to the main island of Tongatapu with all species occurring almost exclusively inshore and surrounding reefs in depths less than 40 meters.

Invertebrates formed the bulk of the volume of Tonga's marine aquarium trade with 58% followed by Live Hard Coral (19%) and 12% for Soft Coral. Live Fish, Live Rock and Shell Fish combine total of 11 % (Figure 1).

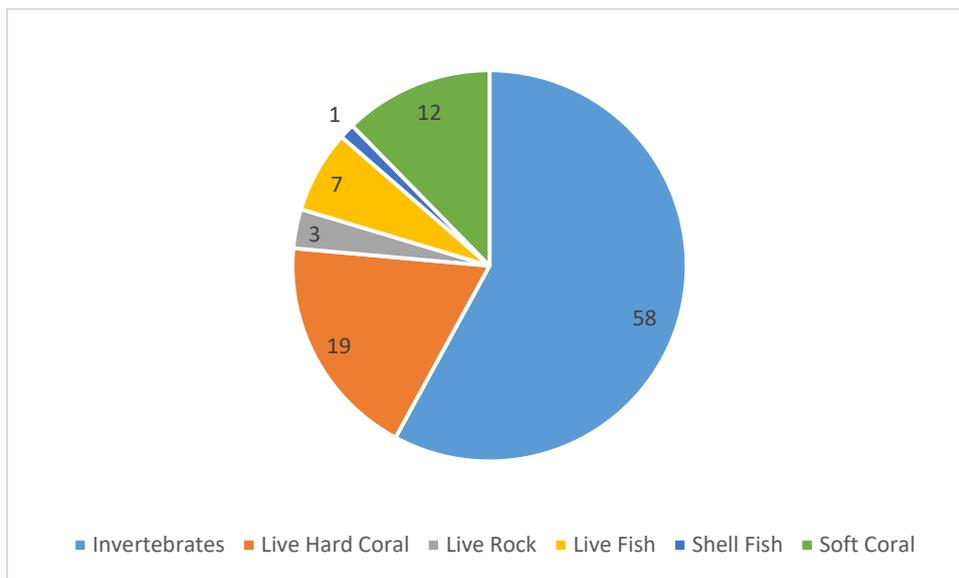


Figure 2: Export data on species composition by volume (kg)

8.4 Production

The Ministry of Fisheries issues five licences to operators in Tongatapu; exploitation levels of marine aquarium fish in Tonga have averaged approximately 190,000 pieces and TOP 660,000 in export volume and value over the last three years. Figure 2 showed the export production over the last two decades.

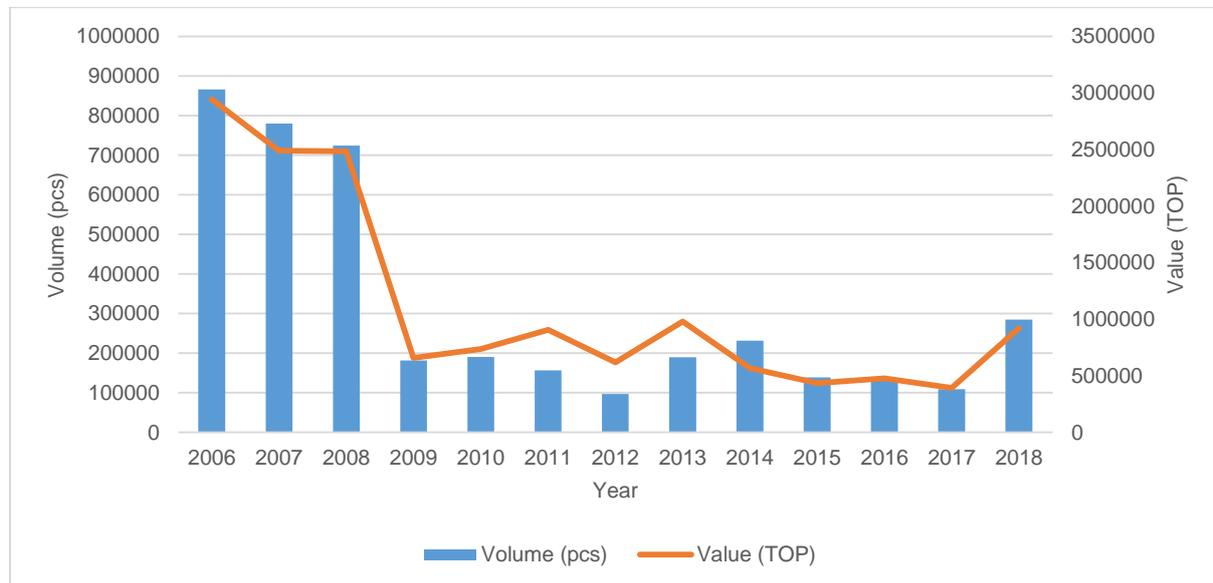


Figure 3: Marine aquarium export production (Source: Tonga Ministry of Fisheries)

9 MISCELLANEOUS

9.1 Amendments and review

This is a one-year plan. A mid-term review will take place by end of June and the final review will occur just prior to the end of the plan in 2020. The CEO can amend this plan if required.

9.2 Implementation

The Ministry may opt to develop a more detail implementation plan based on Table X above with its stakeholders for smooth and effective implementation of this plan.

9.3 Monitoring, Evaluation and Learning

Monitoring, evaluation and learning (MEL) is critical to ensure that the plan is achieving what it sets out to achieve (monitoring), achieving the right results (evaluation) and what needs to be done to improve (learning).

The Ministry will develop a MEL plan to assist in the monitoring, evaluation and learning of the plan.

Appendix A: Terms and Conditions

1. Terms & Conditions on Aquarium Fish Processing Establishment Licence

E. Every licence holder shall–

Kuo pau ki he taha ma'u laiseni ke ne –

- (a) notify the Secretary within 14 days of any change to the registered company address;
fakaha ki he Sekelitali 'i loto 'i he 'aho 'e 14 ha liliu 'i he tu'asila 'a e kautaha kuo lesisita;
- (b) conduct an analysis of the processing of fish intended for export in order to identify any food-safety hazards;
fakahoko hano 'analaiso 'a hono ngaahi 'o e ika 'oku fakataumu'a ke hu atu ki tu'apule'anga ke malava ke 'ilo ha ngaahi fakatu'utamaki ki he malu 'a e me'atokoni;
- (c) follow a hazard analysis, where seafood safety hazards are reasonably likely to occur, the processor shall request a person appropriately trained in applying the principles of HACCP or an authorized officer, to develop a written HACCP Plan;
muimui'i ha 'analaiso 'o ha fakatu'utamaki, 'i he taimi 'oku tui 'e ngali hook ha fakatu'utamaki ki he malu 'a e me'atokoni, kuo pau ki he taha ngaahi ke ne kole ha taha 'oku ne ma'u 'a e taukei fe'unga 'i hono fakahoko 'o e ngaahi tefito'i taumu'a 'a e HACCP pe ko ha'Inisipekita, ke fa'u ha Palani HACCP;
- (d) implement the HACCP Plan;
fakahoko 'a e Palani HACCP;
- (e) monitor and record reviews of the HACCP Plan, critical limits at the critical control points, corrective action plans employed and the verification procedures weekly;
muimu'i mo lekooti 'a e ngaahi fakalelei 'o e Palani HACCP, ngaahi fakangatangata mahu'inga 'i he ngaahi poini pule'i, ngaahi palani ki hono fakatonutonu 'a e ngaue 'oku ngaue'aki mo fakapapau'i 'a e ngaahi founa fakahoko ngaue fakauike;
- (f) maintain accurate records on a daily basis on such forms as may be required by the Secretary relating to the operations carried out in such establishment, including records of the origin, dates, quantity, type and quality of fish received, processed, sold and exported and other information which the Secretary may require;
tauhi 'a e ngaahi lekooti ke totonu faka'aho 'i he ngaahi foomu 'e fiema'u 'e he Sekelitalu fekau'aki mo e ngaahi ngaue 'oku fakahoko 'i he ngaahi fale ko ia, kau ai 'a e ngaahi lekooti 'o e tupu'anga, ngaahi 'aho, lahi, fa'ahinga mo e lelei 'a e ika 'oku ma'u, ngaahi, fakatau atu mo hu atu ki tu'apule'anga mo ha toe fakamatala kehe pe 'e fiema'u 'e he Sekelitali.
- (g) ensure all such records and the processing premises are open to regular inspection and investigation at any time by fisheries inspectors and authorised officers ;
fakapapau'i ko e ngaahi lekooti kotoa ko ia pe mo e feitu'u ngaahi'anga 'oku 'ata ki hano toutou sivi'i mo fakatotolo'i 'i ha taimi pe 'e he kau 'Inisipekita 'a e toutai mo e kau 'ofisa kuo fakamafai
- (h) allow fisheries inspectors, authorised officers or other personnel to participate fully in any research or survey project inside the processing facility;
faka'ata 'a e kau faisivi 'a e toutai, kau 'Inisipekita 'a e Toutai, kau 'ofisa fakamafai pe ko ha to e taha ngaue kehe ke kau atu ki ha fekumi pe ngaue savea 'i loto 'i he fale ngaue ngaahi'anga;

- (i) ensure that all employees operating under this licence are sufficiently trained in processing and the handling of fish and fish product to enhance the quality;
fakapapau'i ko e kau ngaue kotoa pe 'oku nau ngaue'aki 'a e laiseni ko 'eni 'oku nau ma'u ha ako ngaue fe'unga 'i hono ngaohi mo ngaue ki he ika mo e ngaahi koloa ika ke fakautuutu 'a 'ene lelei;
- (j) submit a list of employees together with their health certificate to the Secretary when requested;
'oatu ha lisi 'o e kau ngaue fakataha mo 'enau tohi fakamo'oni mo'ui lelei ki he Sekelitali 'i ha'ane fiema'u;
- (k) notify the Secretary immediately of any change to employees;
fakaha ki he Sekelitali 'i he taimi pe koia 'e hoko ai ha liliu ki he kau ngaue;
- (l) quarterly submission of water testing result from the Tonga Water Board to the Secretary;
'oatu fakakuata ha ola 'a hono sivi 'o e vai mei he Poate Vai 'a Tonga ki he Sekelitali
- (m) ensure that the fish processed at such establishment shall not exceed the total quotas allowed to that establishment, including those relating to species and quantity;
*fakapapau'i ko e ika na'e ngaohi 'i he fale ngaohi'anga ika ko ia 'oku 'ikai ke lahi hake 'i he kuota na'e
fakangofua ki he fale ngaohi'anga ko ia, 'o kau ai 'a e fa'ahinga mo e lahi 'o e ika*
- (n) ensure that any information provided to the Secretary, whether in a prescribed form or otherwise, is provided clearly, legibly, truthfully and accurately.
*fakapapau'i ko e fakamatala 'oku 'oatu ki he Sekelitali, 'o tatau aipe pe 'oku 'i ha foomu na'e
tu'utu'uni pe 'ikai, 'oku mahino, ala lava 'o lau, mo'oni pea tonu.*

2. Terms & Conditions on Aquarium Fish Export Licence

The Licence holder shall -

Kuo pau ki he taha ma'u laiseni ke ne –

- (a) notify the Secretary within 14 days of any change to his address;

fakaha ki he Sekelitali 'i loto 'i he 'aho 'e 14 ha fetongi 'a 'ene tu'asila;

- (b) not fish more than 50 pieces of live hard coral per week;

'oua na'a toutai'i 'o lahi hake 'i he konga feo mo'ui 'e 50'i he uike;

- (c) not fish live hard coral of the genera specified in Table 1 that is over the maximum size of 20 centimetres in length.

'oua na'a toutai 'a e feo mo'ui 'i he fa'ahinga 'oku tu'utu'uni 'i he Tepile 1 'oku lahi hake 'a hono lahi 'i he 20 cm 'a hono loloa.

Table 1 / Tepile 1

No.	Genera	No.	Genera	No.	Genera
1	Montipora	7	Turbinaria	13	Favia
2	Acropora	8	Galaxea	14	Favites
3	Alvepora	9	Goniastrea	15	Platygyra
4	Caulastrea	10	Lopophyllia	16	Pocillopora
5	Euphyllia	11	Millipora		
6	Tubastrea	12	Tubipora		

(d) not fish more than 100,000 aquarium fish for the 12-month period of this licence;

‘oua na’a toutai ‘o lahi hake ‘i he 100,000 ‘a e ika pusiaki’i ‘i he tauhi’anga ika mo’ui ki he vaha’a taimi ko e mahina ‘e 12 ‘o e laiseni ko eni.

3. Terms & Conditions on Licence to fish for marine aquarium fish.

. The Licence holder shall -

Kuo pau ki he taha ma’u laiseni ke ne –

(a) notify the Secretary within 14 days of any change to his address;

fakaha ki he Sekelitali ‘i loto ‘i he ‘aho ‘e 14 ha fetongi ‘a ‘ene tu’asila;

(b) ensure that only his employees’ fish for marine aquarium fish under this licence;

fakapapau’i ko ‘ene kau ngaue pe ‘oku ngaue toutai ika ke tauhi ‘i he tauhi’anga ika mo’ui ‘i he laiseni ko ‘eni;

(c) provide the Secretary, in writing, with a list of all employees operating under this licence and all employees shall wear identification cards;

‘oatu ki he Sekelitali, ‘i ha tohi, ha lisi ‘o e kau ngaue kotoa ‘oku nau ngaue’aki ‘a e laiseni ko ‘eni pea kuo pau ki he kau ngaue kotoa ke nau tui ha ngaahi kaati fakailonga.

(d) not use any vessel to conduct any activity under this licence without a local fishing vessel licence;

‘oua na’a ngaue’aki ha vaka ke fakahoko’aki ha ngaue ‘i he laiseni ‘oku ‘ikai ke ‘i ai laiseni vaka toutai fakalotofonua;

(e) not fish in any Marine Reserve and all fringing reefs surround Tongatapu, ‘Eueiki, ‘Atata, Fafa and

'Eua Island;

'oua na'a toutai 'i ha Marine Reserve mo e ngaahi hakau 'ataakai 'i Tongatapu, 'Eueiki, 'Atata, Fafa mo 'Eua;

(f) not receive any marine aquarium fish from any person unless that person is an employee of the licence holder;

'ikai ma'u ha ika ke tauhi 'i he tauhi'anga ika mo'ui mei ha taha tukukehe ka ko e tokotaha ko ia ko ha taha

ngaue 'a e taha ma'u laiseni;

(g) not use diving equipment that utilizes surface supplied air (hookah equipment) to fish for any marine aquarium fish;

'oua na'a ngaue'aki ha naunau uku 'oku ngaue'aki ha 'ea 'i 'olunga 'i he fukahi tahi (hookah equipment) ke toutai'i ha ika ke tauhi 'i he tauhi'anga ika mo'ui;

(h) not use self-contained under water breathing apparatus (SCUBA) equipment or any diving equipment that utilizes compressed gas to fish for hard and soft corals;

'oua na'a ngaue'aki ha me'angaue manava 'i he vai (SCUBA) pe ko ha naunau uku 'oku ngaue'aki 'a e 'ea kuo tanaki ke toutai'i 'a e feo;

(i) not fish more than 50 pieces of live hard coral per week;

'oua na'a toutai'i 'o lahi hake 'i he konga feo mo'ui 'e 50 'i he uike;

(j) not fish live hard coral of the genera specified in Table 1 that is over the maximum size of 20 centimetres in length.

'oua na'a toutai 'a e feo mo'ui 'i he fa'ahinga 'oku tu'utu'uni 'i he Tepile 1 'oku lahi hake 'a hono lahi 'i he 20 cm 'a hono loloa.

Table 1 / Tepile 1

No.	Genera	No.	Genera	No.	Genera
1	Montipora	7	Turbinaria	13	Favia
2	Acropora	8	Galaxea	14	Favites
3	Alvepora	9	Goniastrea	15	Platygyra
4	Caulastrea	10	Lopophyllia	16	Pocillopora
5	Euphyllia	11	Millipora		
6	Tubastrea	12	Tubipora		

(k) not fish more than 100,000 aquarium fish for the 12 month period of this licence; and

'oua na'a toutai 'o lahi hake 'i he 100,000 'a e ika ke tauhi 'i he tauhi'anga ika mo'ui ki he vaha'a taimi koe mahina 'e 12 'o e laiseni ko 'eni; pea

(l) not use destructive fishing techniques for harvesting marine aquarium fish or use or have in

possession any destructive fishing gear (such as hammers, crowbars and poisons) at the point of harvesting or on any vessel used under this licence;

'oua na'a ngaue'aki ha founga toutai fakatu'utamaki ke toutai 'aki 'a e ika ke tauhi 'i he tauhi'anga ika mo'ui pe ngaue pe ma'u ha me'angaue toutai fakatu'utamaki ('o hange ko e hamala, sina pe ngaahi me'a fakakona) 'i he taimi toutai pe ko ha vaka 'oku ngaue'aki 'i he laiseni ko 'eni;

5. The licence holder shall ensure that any information provided to the Secretary, whether in a prescribed form or otherwise, is provided clearly, legibly, truthfully and accurately.

Kuo pau ke fakapapau'i 'e he taha ma'u laiseni ko e kotoa 'o e fakamatala 'oku 'oatu ki he Sekelitali, 'o tatau ai pep e 'i ha foomu kuo tu'utu'uni pe me'a kehe, 'oku mahino, lau ngofua, mo'oni pea tonu.

Appendix B: Fees in TOP

APPLICATIONS AND LICENSEES	NEW APPLICATION FEES (TOP) plus CT	RENEW LICENCE FEES (TOP) plus CT
Application for a licence to fish for marine aquarium fish - Form 4	\$15.00	\$11.50
Application to register a fish processing establishment - Form 1	\$5.75	-
Application for a fish processing establishment licence - Form 3	\$57.50	\$11.50
Application for an aquarium fish export licence - Form 9	\$57.50	\$11.50
REGISTRATION AND LICENCE		
Licence to fish for marine aquarium fish	\$2,300.00	\$ 2,300.00
Registration of fish processing establishment	\$11.50	-
Fish processing establishment licence	\$115.00	\$115.00
Aquarium fish export licence	\$1,150.00	\$1,150.00
Registration of local fishing vessel (once only and not when renew)	\$5.00 for the first 6 meters and \$2.00 for every additional meters after the first 6 meters	
Licence for local fishing vessel	a. Vessels up to 10 meters. \$200.00 for first 6 meters and every additional meter after the first 6 meters shall be \$5.00. b. Vessels 10.1 meters to 20 meters. \$500.00 for the first 6 meter and every additional meter after the first 6 meters shall be \$10.00 c. Vessels greater than 20.1 meters. \$800.00 for the first 6 meters and every additional meter after the first 6 meters shall be \$20.00	

MARINE AQUARIUM RESOURCE	RESOURCE RENT
Soft coral	0.5% of total export value
Live hard coral	1% of total export value
Live fish	5% of total export value
Invertebrate	0.5% of total export value
Customs Tax	15% of total resource rent

Appendix C: The Process for Advertising, Applying, Reviewing and Issuing Licenses to Fish and Export Marine Aquarium Fish

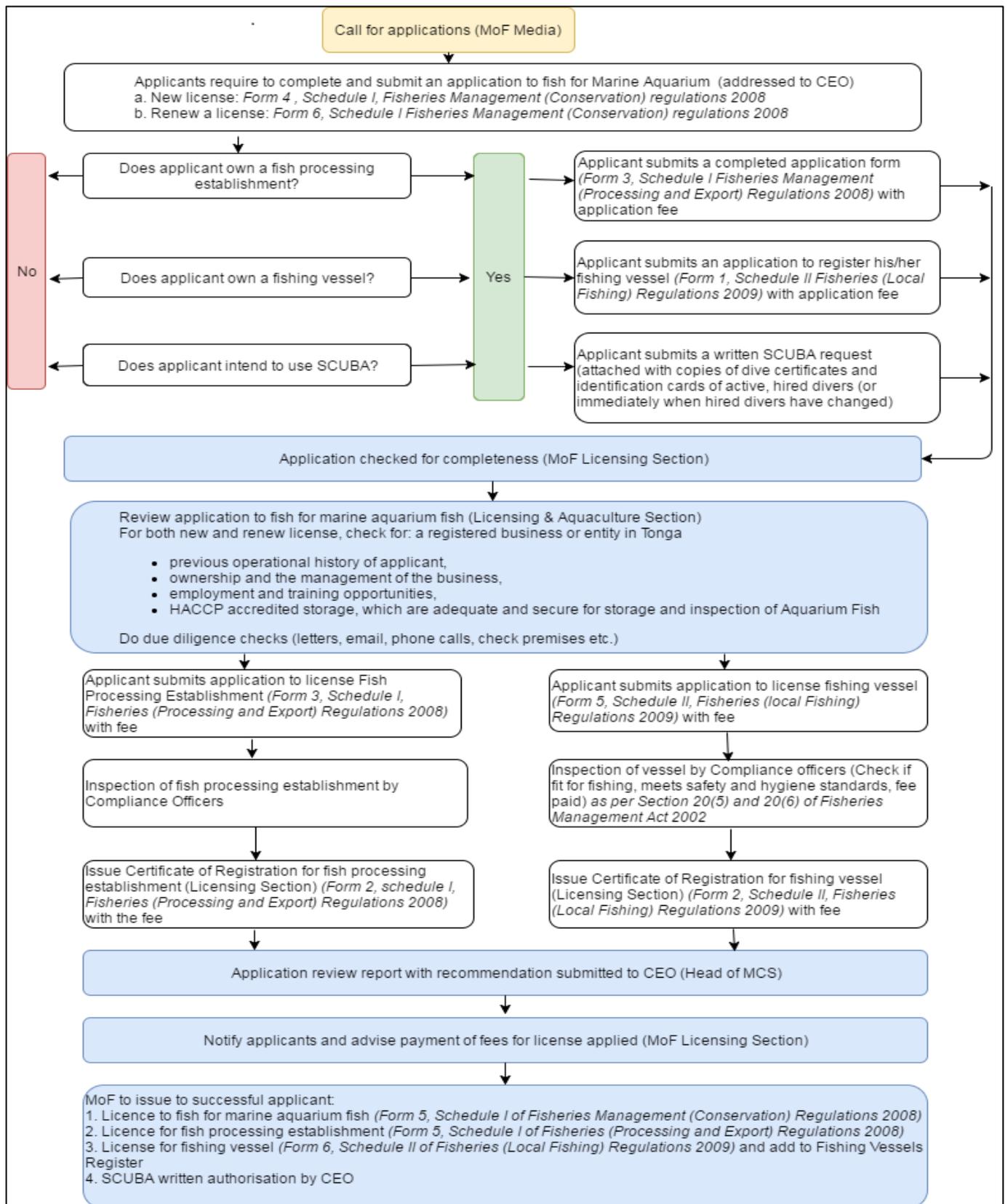
1. Tonga marine aquarium fish license process

The flow chart below illustrates the process to follow for advertising, applying, reviewing and issuing marine aquarium fish licences. Criteria have been developed so that, as far as possible, the Ministry of Fisheries may conduct a review of the application, including due diligence checks to provide a recommendation to the Chief Executive Officer.

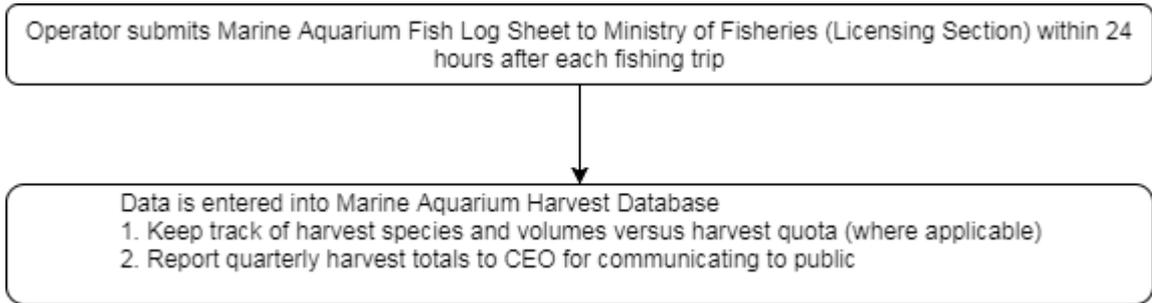
Licence to Harvest Aquarium Fish

The licence:

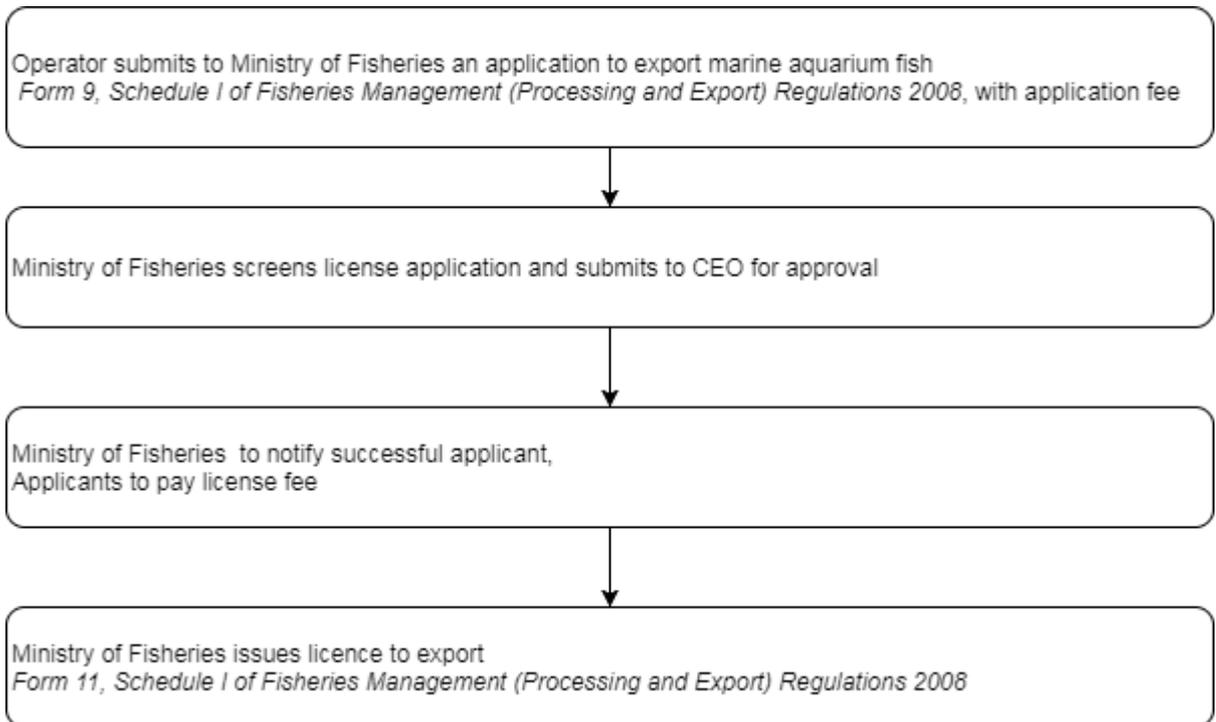
- Applicable to companies that intend to fish for marine aquarium fish for export
- Issued by the Ministry of Fisheries
- Cannot be issued until prescribed fees are paid in full
- Is for a term of one year and subject to renewal (with annual licence fees to be paid)
- Is non-transferable
- Has operating terms and conditions
- Can be terminated if operating conditions are not followed
- Should include applications
 - register and license their fishing vessel
 - register and license their fish processing establishments (this does not apply if Ministry of Fisheries facilities at Sopu are used)
 - written authorization to use scuba (a scuba request is required with the application (new or renewed licence) or immediately when hired divers have changed).



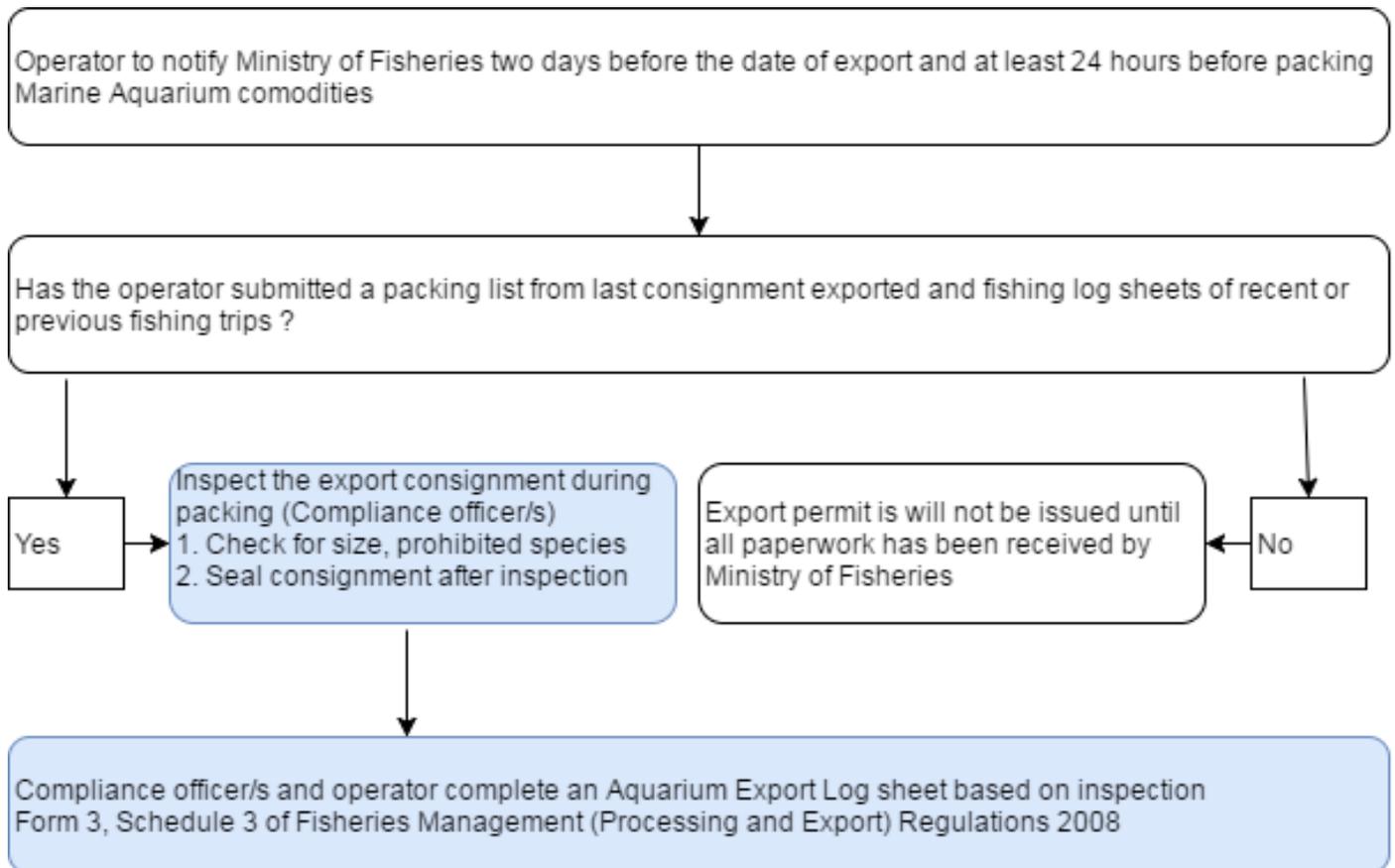
2. During the harvest of marine aquarium fish



3. Exporting marine aquarium fish



4. Permit to export a consignment



Appendix D: Marine Aquarium Logsheet

This form is to be completed and provided to the Ministry of Fisheries no later than 24 hours after fishing has occurred.

FORM 2
Form 2

FISHERIES MANAGEMENT ACT 2002
LAO KI HE PULE'I'O E TOUTAI 2002
(Fisheries Management (Conservation and) Regulations 2008 – regulation 36)
(Ngaahi Tu'utu'ui ki he Pule'I'oe Toutai (Fakalenga) 2008 – n'utu'ui 36)

LOG SHEET FOR MARINE AQUARIUM FISHING
TOHLEKOOTI KI HE IKA KE TAHI IHE TAHI'ANGA IKA MO'UI

1. Name of the Licence Holder:.....
Hingoa 'a e ika mo'ui lahoi
2. Name of the Boat:
Hingoa 'o e vaka
3. Name of the Skipper:.....
Hingoa 'o e 'akivaka
4. Date:.....
'Ika
5. Number of Divers:.....
Tobolaki 'o e kau vaka
6. Hours of fishing:
Houa ki he vaka
7. Fishing Location (Position):.....
Esiu'a vaka (tu'a'anga)

Species name (Fish & Coral)	Common names	Number of pieces or fish	Depth (m)	Length (cm) for corals

Boat Skipper Signature:..... <i>Eka'ama'ani hingoa 'o e 'akivaka</i>	Date:..... <i>'Ika</i>
Company's Manager/Agent Signature:..... <i>Eka'ama'ani hingoa 'a e pule koutaha/fakalenga</i>	Date:..... <i>'Ika</i>
Fisheries Inspector/ Authorized Officer Signature:..... <i>Eka'ama'ani hingoa 'a e Intepetita / 'Ofisa kua fakamahi</i>	Date:..... <i>'Ika</i>

FORM 3

FOOMU 3

FISHERIES MANAGEMENT ACT 2002

LAO KI HE PULE'I 'O E TOUTAI 2002

(Fisheries Management (Processing and Export) Regulations 2008 – Regulation 17(a))

(Nagahi Tu'utu'uai ki he Pule'i 'o e Toutai (Nagahi ma Hu Atu), 2008 – Tu'utu'uai 17(a))

AQUARIUM EXPORT LOG SHEET

TOHI LOKA KI HONO HU ATU KI TU'APULE'ANG 'A E IKA KE TAHI 'I HE TAHI'ANGA IKA MO'UI

1. Name of the Licence Holder:

Higaa 'a e toba ma'u laisea

2. Date: 3. Airline:

'Aa

Kautaba vakaoua

Species name of fish or coral	Common names	Number of fish by species	Coral size (cm)
Higaa 'a e fa'abiga 'a e ika pe faa	Higaa anamahi	Lahi, fakafa'abiga	Lahi 'a e faa (cm)

Company's Manager/Agent Signature: Date:

Ekaama'oa Higaa 'a e Pule 'a e Kautaba/Ekaama'oa

'Aa

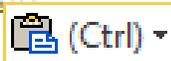
Fisheries Inspector/ Authorized Officer Signature: Date:

Ekaama'oa Higaa 'a e 'Ofisa Ealsivi/Ekaama'oa 'a e Toutai

'Aa

Custom Sta

Sitaa Kasitomu



Appendix E: Code of Practice for Packing and Export of Marine Aquarium Fish

SHIPPING WATER

Shipping Water & Temperature:

- ✓ Keep Shipping Water contained cleaned and covered – rinse well before each use
 - ✓ If possible, filter water with filter bag, be sure the filter bag is clean
 - ✓ If fish vats are 21°C – 26.7°C (70°F to 80°F) shipping water should be 24.5°C (76°F)
 - ✓ If fish vats are above 26.8°C (80°F) shipping water should be 25.5°C (78°F)
- (HEAT OR COOL WATER AS NEEDED TO REACH CORRECT TEMPERATURE)*

Shipping Water Medication:

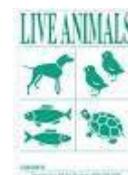
- ✓ 1 level spoon as provided of Nitrofurazone to 1L of freshwater. Shake well.
¼ cup of mixed solution in a 32 U.S. gallon bucket
- ✓ Alternatively 1mL of Nitrofurazone to 15L of shipping water



BOXES

Double layer box using your standard tall box. To make the support cross for top layer:

- ✓ Height of cross 12.5cm (5 in) or 50% internal height of box
- ✓ Cross should span diagonally from corner to corner
- ✓ Cross should be waxed cardboard or put plastic bage over each section of cross
- ✓ Platform on top of cross should fit snugly on all sides Labelling the box for export:
- ✓ Place “UP” arrow labels and “LIVE ANIMALS” label on box’s long sides
- ✓ Circle fist on “LIVE ANIMALS” label and write “LIVE TROPICAL FISH” at the bottom
- ✓ Label box with your company name / address and customer name / address
- ✓ Label box with species names of the fish inside and quantities of each



BAGS

- ✓ Place bags of a given size in individual containers for easy and quick access during packing
- ✓ Keep bag containers easily accessible for fish packer
- ✓ Put newspaper lining in all bags so that it goes completely around the bag
- ✓ Remove all air from bag before filling with oxygen
- ✓ Always keep bag upright
- ✓ Pack in a box as soon as possible

TRANSFER OF FISH FROM VAT & FISH BASKETS TO BAG

- ✓ Use soft small-meshed net to remove fish from basket
- ✓ Lift basket before netting the fish to prevent the fish from jumping, but leave enough water in the basket for the fish to swim. Do not have the fish dry in the basket
- ✓ Change water in container bringing fish to packing table every time you bring fish – or at least every 20 minutes
- ✓ Keep Angels, and fish that fight, separately when bringing fish to packing table
- ✓ Screen fish one last time before putting into bag
- ✓ Do not ship fish that have been dropped on floor



HOLDING TIME FOR FISH

Fish size	Number of days prior to packing
Small (< 2in or < 5cm)	2 - 3 days
Medium (2 - 4in or 5 – 10cm)	3 - 4 days
Large (4 - 6in or 10 – 15cm)	4 - 5 days

Appendix F: Coordinates and maps of special management areas and habitat reserve

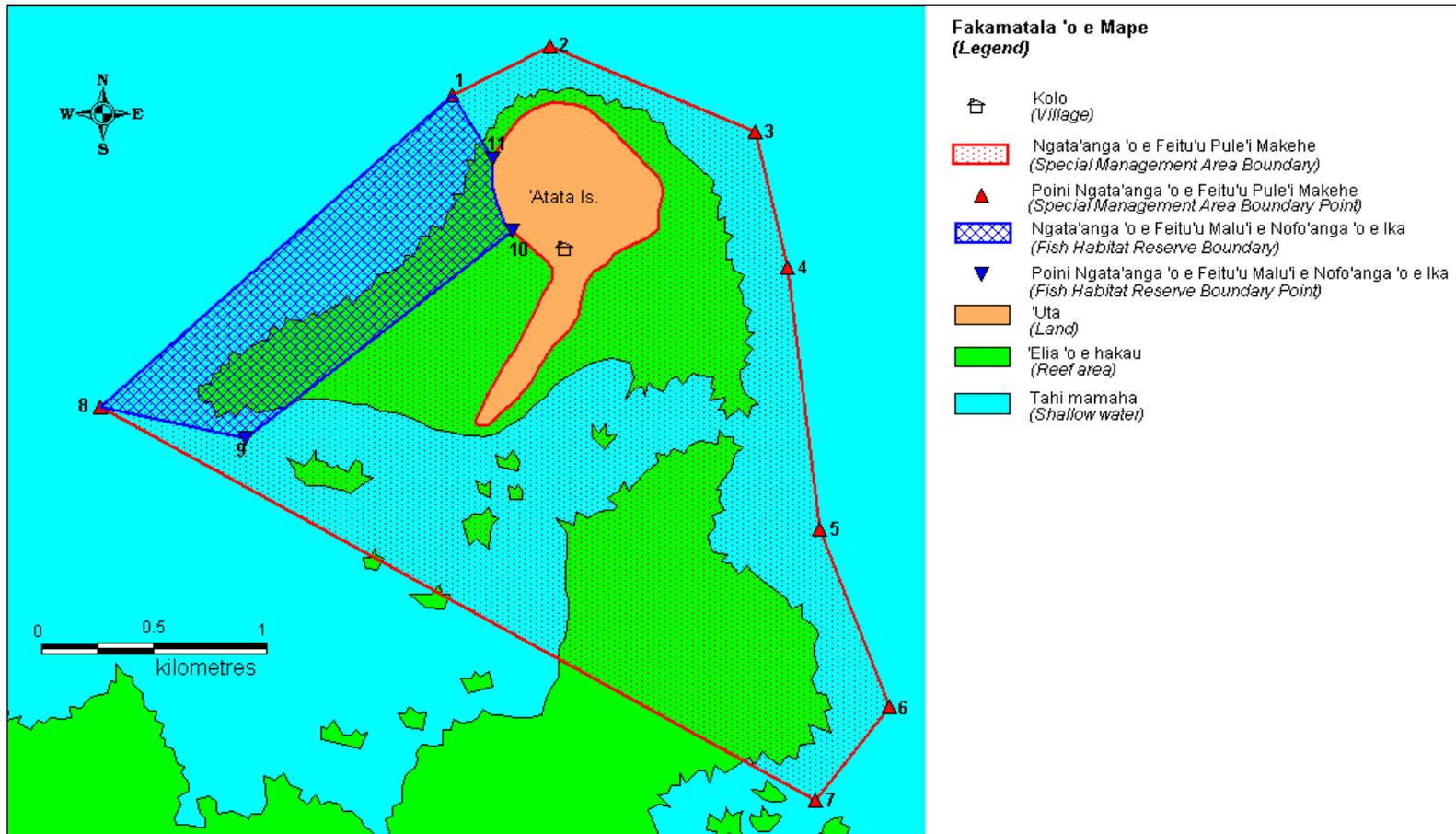
Longitude and Latitude of 'Atata Special Management Area Boundary Points

Boundary point	Decimal Longitude	Decimal Latitude
1	175.258750°W	21.042050°S
2	175.254610°W	21.039910°S
3	175.245850°W	21.043640°S
4	175.244481°W	21.049626°S
5	175.243080°W	21.061140°S
6	175.240110°W	21.068930°S
7	175.243240°W	21.073050°S
8	175.273830°W	21.055750°S

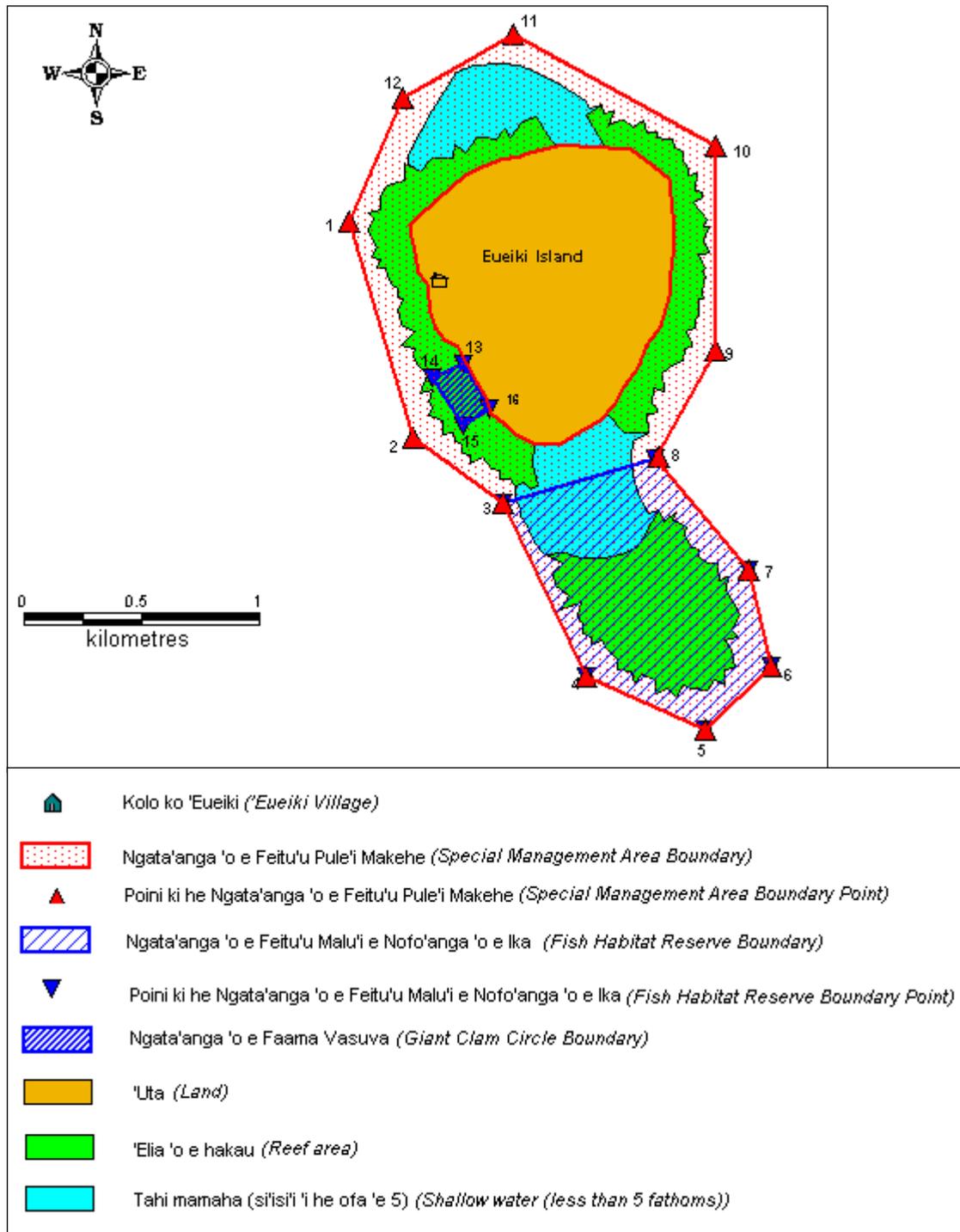
Longitude and Latitude of 'Atata Fish Habitat Reserve Boundary Points

Boundary point	Decimal Longitude	Decimal Latitude
1	175.258750°W	21.042050°S
8	175.273830°W	21.055750°S
9	175.267600°W	21.057150°S
10	175.256193°W	21.048023°S
11	175.257033°W	21.044828°S

Map of the 'Atata Special Management Area



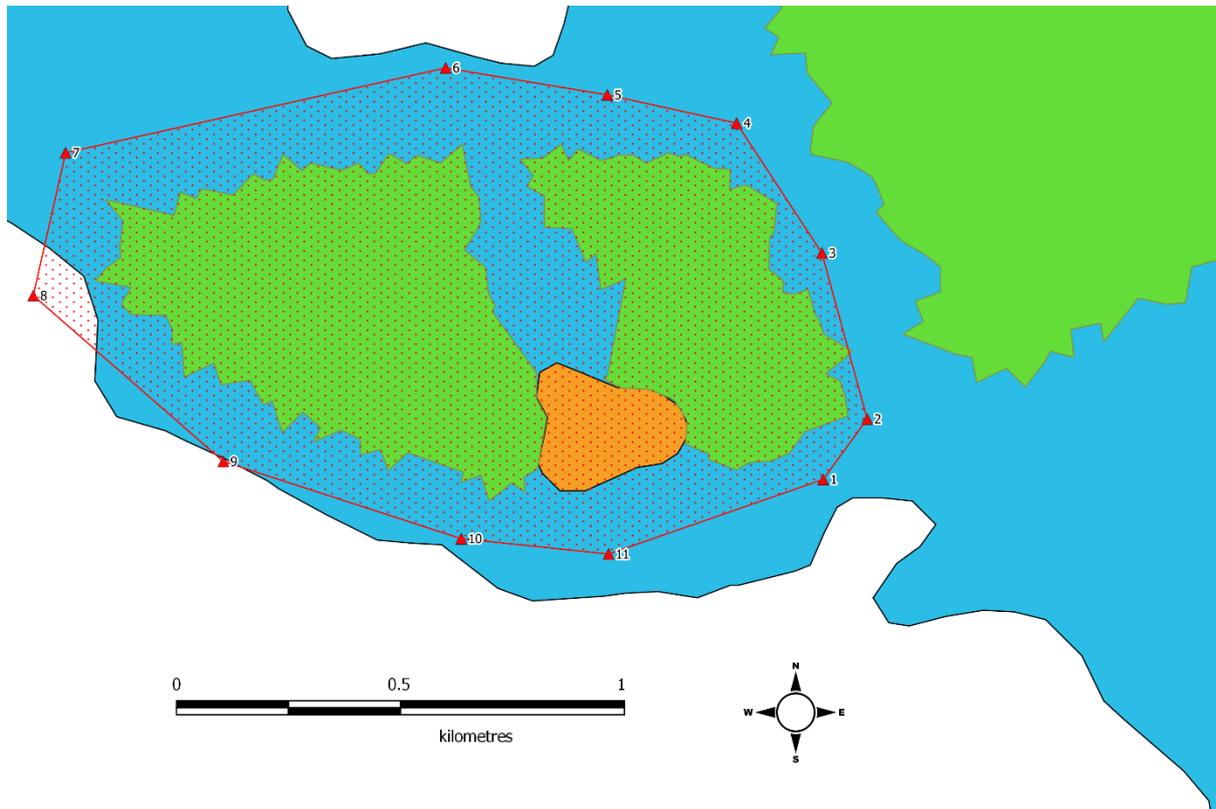
Map of Feitu'u Pule'I Makehe 'a 'Eueiki ('Eueiki Special Management Area Boundary)



Boundary Coordinates of Fafa Special Management Area

Point	Latitude	Longitude
1	21° 05' 20.2" S	175° 09' 14.2" W
2	21° 05' 15.5" S	175° 09' 10.8" W
3	21° 05' 02.6" S	175° 09' 14.3" W
4	21° 04' 52.5" S	175° 09' 20.9" W
5	21° 04' 50.3" S	175° 09' 30.9" W
6	21° 04' 48.2" S	175° 09' 43.4" W
7	21° 04' 54.8" S	175° 10' 12.8" W
8	21° 05' 05.9" S	175° 10' 15.3" W
9	21° 05' 18.8" S	175° 10' 00.6" W
10	21° 05' 24.8" S	175° 09' 42.2" W
11	21° 05' 26.0" S	175° 09' 30.8" W

Map of Fafa Special Management Area



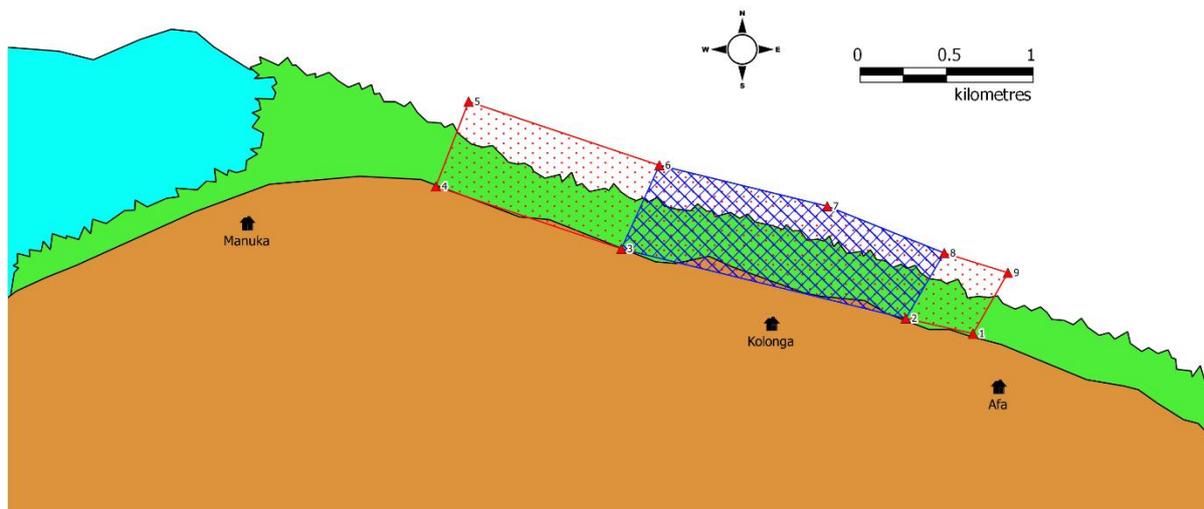
Boundary coordinates of the Kolonga Special Management Area

Point	Latitude	Longitude
1	21° 7'44.16"S	175° 3'33.13"W
2	21° 7'41.10"S	175° 3'46.64"W
3	21° 7'27.06"S	175° 4'43.64"W
4	21° 7'14.46"S	175° 5'20.83"W
5	21° 6'57.34"S	175° 5'14.27"W
6	21° 7'10.20"S	175° 4'36.02"W
7	21° 7'18.45"S	175° 4'2.36"W
8	21° 7'27.90"S	175° 3'38.90"W
9	21° 7'31.88"S	175° 3'26.15"W

Boundary coordinates of the Kolonga Fish Habitat Reserve

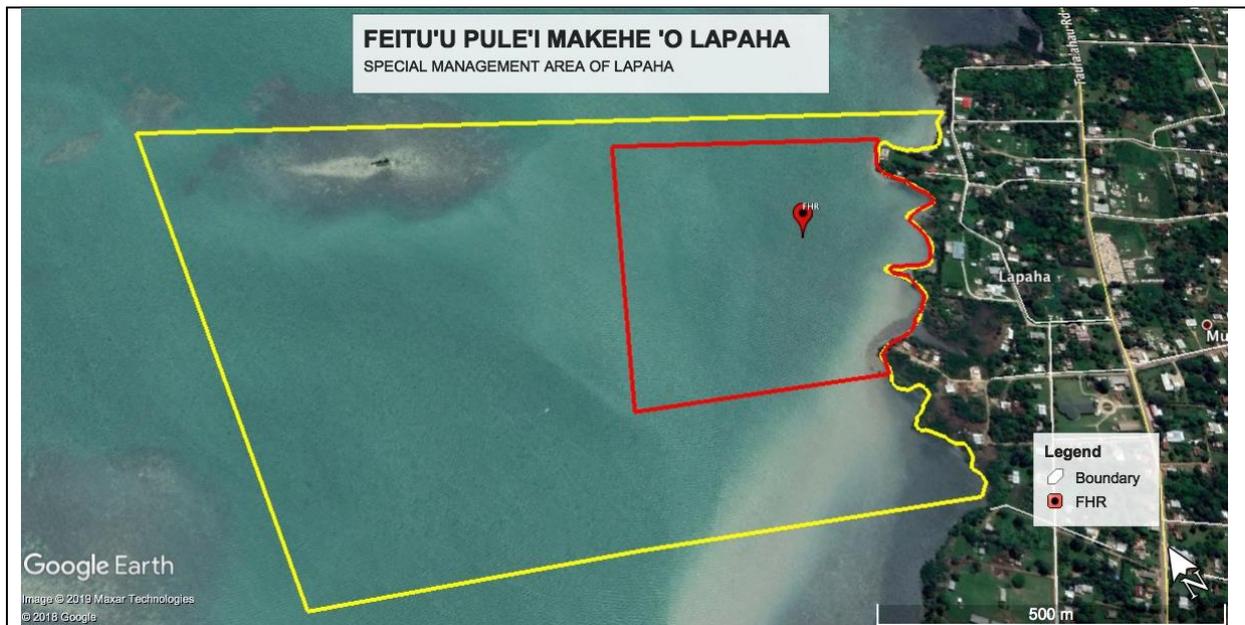
Point	Latitude	Longitude
2	21° 7'41.10"S	175° 3'46.64"W
3	21° 7'27.06"S	175° 4'43.64"W
6	21° 7'10.20"S	175° 4'36.02"W
7	21° 7'18.45"S	175° 4'2.36"W
8	21° 7'27.90"S	175° 3'38.90"W

Map of Kolonga Special Management Area

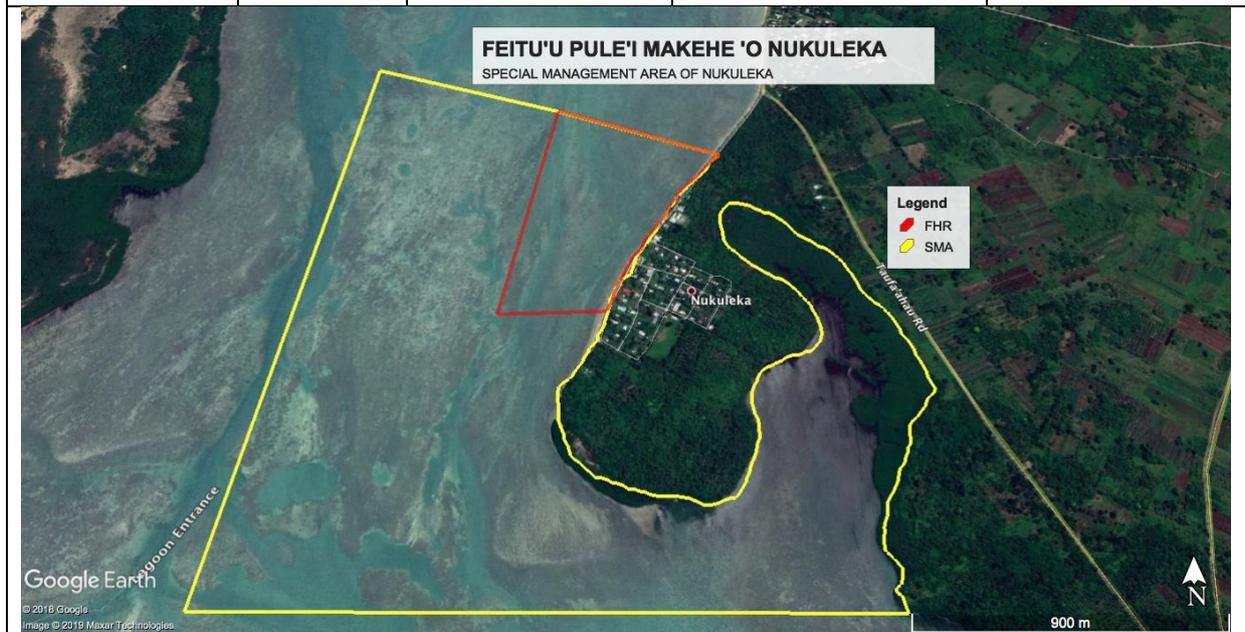




13. Holonga	2017	21°11'48.82''S	175°9'6.44''W	SMA
		21°11'7.30''S	175°9'15.19''W	SMA
		21°11'3.70''S	175°8'44.66''W	SMA
		21°11'1.99''S	175°8'28.47''W	SMA
		21°11'27.18''S	175°8'25.38''W	SMA
		21°11'13.31''S	175°8'43.26''W	SMA
		21°11'3.70''S	175°8'44.66''W	FHR
		21°11'1.99''S	175°8'28.47''W	FHR
		21°11'27.18''S	175°8'25.38''W	FHR
		21°11'13.31''S	175°8'43.26''W	FHR

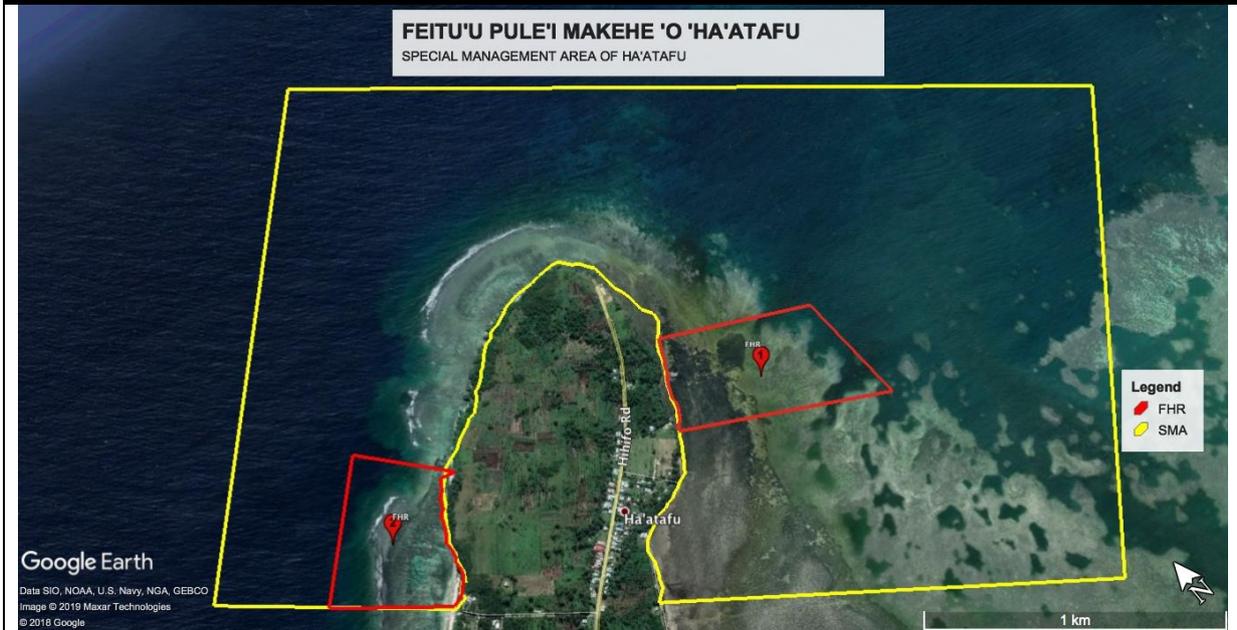


14. Lapaha	2017	21°10'25.32"S	175° 7'1.54"W	SMA
		21°10'45.97"S	175° 7'18.36"W	SMA
		21°10'37.52"S	175° 7'35.41"W	SMA
		21°10'26.51"S	175° 7'55.03"W	SMA
		21° 9'54.70"S	175° 7'45.00"W	SMA
		21°10'7.95"S	175° 7'26.28"W	SMA
		21°10'24.50'' S	175°7'6.90'' W	SMA
		21°10'38.15'' S	175°7'17.62	SMA
		21°10'24.50"S	175° 7'6.90"W	FHR
		21°10'16.19"S	175° 7'22.22"W	FHR
		21°10'32.86"S	175° 7'31.32"W	FHR
		21°10'38.15"S	175° 7'17.62"W	FHR



15. Nukuleka	2016	21°8'30.30'' S	175°8'11.24'' W	SMA
--------------	------	----------------	-----------------	-----

		21°9'38.68'' S	175°8'22.72'' W	SMA
		21°9'39.68'' W	175°7'11.22'' W	SMA
		21°8'44.47'' S	175°7'26.27'' W	FHR
		21°8'37.25'' S	175°7'47.05'' W	FHR
		21°9'6.76'' S	175°7'53.41'' W	FHR
		21°9'6.58'' S	175°7'40.74'' W	FHR



16. Ha'atafu	2017	21°4'23.22'' S	175°19'44.88'' W	SMA
		21°4'53.60'' S	175°19'1.53'' W	SMA
		21°4'10.40'' S	175°18'17.33'' W	SMA
		21°3'6.77'' S	175°19'39.91'' W	SMA
		21°3'52.77'' S	175°20'24.54'' W	SMA
		21°4'10.59'' S	175°19'30.00'' W	FHR 1
		21°4'22.39''	175°19'6.73'' W	FHR 1
		21°4'9.18'' S	175°19'7.07'' W	FHR 1
		21°3'59.16'' S	175°19'25.73'' W	FHR 1
		21°4'9.91'' S	175°20'2.85'' W	FHR 2
		21°3'58.21'' S	175°19'53.77'' W	FHR 2
		21°3'49.05'' S	175°20'2.09'' W	FHR 2
		21°4'1.23'' S	175°20'14.49'' W	FHR 2

Appendix G: Marine aquarium harvesting zones



Zone	Latitude	Longitude
Mounu 1	21° 7'52.11"S	175°11'21.20"W
Mounu 2	21° 7'32.40"S	175°11'30.33"W
Mounu 3	21° 7'25.06"S	175°11'11.53"W
Mounu 4	21° 7'42.85"S	175°11'2.18"W



Zone	Latitude	Longitude
Ualanga Uta 1	21° 7'2.38"S	175°11'56.90"W
Ualanga Uta 2	21° 6'51.77"S	175°12'2.80"W
Ualanga Uta 3	21° 6'49.02"S	175°11'55.23"W
Ualanga Uta 4	21° 6'56.29"S	175°11'47.74"W



Zone	Latitude	Longitude
Ualanga Lalo 1	21° 6'17.32"S	175°11'15.77"W
Ualanga Lalo 2	21° 6'1.10"S	175°11'33.25"W
Ualanga Lalo 3	21° 5'53.07"S	175°11'16.59"W
Ualanga Lalo 4	21° 5'56.58"S	175°11'2.32"W
Ualanga Lalo 5	21° 6'8.41"S	175°10'54.70"W



Zone	Latitude	Longitude
Velitoo,Onevai,Onevao 1	21° 5'12.54"S	175° 9'5.78"W
Velitoo,Onevai,Onevao 2	21° 3'52.79"S	175° 7'14.47"W
Velitoo,Onevai,Onevao 3	21° 6'16.70"S	175° 7'10.16"W
Velitoo,Onevai,Onevao 4	21° 5'54.45"S	175° 6'9.60"W
Velitoo,Onevai,Onevao 5	21° 5'45.50"S	175° 4'25.45"W
Velitoo,Onevai,Onevao 6	21° 4'46.78"S	175° 4'15.80"W
Velitoo,Onevai,Onevao 7	21° 4'19.27"S	175° 6'1.75"W



Zone	Latitude	Longitude
Motutapu islet to Tau islet 1	21° 5'53.10"S	175° 2'39.39"W
Motutapu islet to Tau islet 2	21° 4'21.13"S	175° 2'36.63"W
Motutapu islet to Tau islet 3	21° 2'39.95"S	175° 1'3.25"W
Motutapu islet to Tau islet 4	21° 0'5.03"S	175° 0'48.12"W
Motutapu islet to Tau islet 5	21° 0'25.12"S	174°59'34.82"W
Motutapu islet to Tau islet 6	21° 3'30.59"S	174°59'29.90"W
Motutapu islet to Tau islet 7	21° 5'58.00"S	175° 1'9.45"W

Appendix H: AUTHORITIES, ROLES AND RESPONSIBILITIES

This section outlines the authorities, their roles and responsibilities in the sustainable management of the marine aquarium trade fishery:

Marine Aquarium Management Committee

The Marine Aquarium Management Committee (MAMC) has been established in accordance with section 7(4) of the Act. The MAMC “shall be primarily responsible for the implementation and review of the fishery plan or otherwise monitor the performance of the fishery subject of the fishery plan or perform such other duties and responsibilities as are given it under the fishery plan consistent with this Act”.

The Chief Executive Officer for the Ministry of Fisheries is the main government link and appointed Chair of the MAMC. The MAMC provides the required co-management link between the government, community and the industry players in the marine aquarium industry.

Members of the MAMC consist of (as a minimum):

- a) the CEO for the Ministry of Fisheries (Chair)
- b) the Fisheries Legal Advisor
- c) a representative from the following government offices
 - i. Department of Environment
 - ii. Customs Department
- b) Representatives from the Hahake and Hihifo district officers
- c) a representative from the Marine Aquarium Exporters Association (MAEA)
- d) three marine aquarium trade operators
- e) representatives from the National Fisheries Council and,
- f) Others that may be co-opted as determined necessary by the CEO for the Ministry of Fisheries.

The MAMC may meet at least twice in a calendar year.

Ministry of Fisheries

Role of the Ministry of Fisheries includes but not limited to the following:

- Administer and implement the provisions of the Fisheries Act in relation to the fishery
- Issues export license including the CITES Export Permit
- Be the Secretariat to MAMC.

Department of Environment

The key role of the Department of Environment is to administer and implement the Environment Management Act in relation to environmental impact assessment on aquarium processing facilities.

Department of Customs

The key role of the Department of Customs is the border control in which they are to inspect the exported products and to ensure that the export documents are in place.

Appendix I: Harvest control process for monitoring the harvest of the marine aquarium species.

MoF will follow the process provided below to monitor the harvest of all marine aquarium species and communicate results to CEO, Minister and stakeholders

