Pacific Community
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Tonga national strategy on aquatic biosecurity

Prepared by Tonga Ministry of Fisheries
and Pacific Community
and supported by the New Zealand Aid Programme

Ministry of Fisheries Tonga

New Zealand Foreign Affairs & Trade Aid Programme

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Foreword

The aquaculture sector is fast growing and will become an important activity for local communities. In Tonga, aquaculture is nowadays seen as a valid alternative income generating activity and as a way to decrease fishing pressure on wild fish stocks. In order to achieve a sustainable development of the aquaculture sector, it is a clear priority for Tonga to make sure that farmed species are healthy and free from relevant aquatic diseases and pests. Moreover, it is also necessary to protect and conserve the countries highly biodiverse natural aquatic environment.

Aquatic biosecurity is therefore the system of standardised protocol measures to minimize possible biological risks in aquatic environments, such as the risk of aquatic diseases, pests and aquatic invasive species.

Good Aquatic Biosecurity measures are vital to maintaining healthy animals, to reducing the risk of acquiring diseases in aquaculture facilities and to harvesting high quality good yield.

The present National Strategy will provide the overarching framework for a better management of biological risks on aquatic environments. It provides a basis for communities, aquaculture farmers, enterprises, investors and government to work together to ensure that the strategy reaches its desired potential.

The formulation of this strategy is being developed by the Ministry of Fisheries based on the outcomes of a national consultation workshop held in Tonga in March 2017 with the support of the Pacific Community (SPC).

Honorable Semisi Tauelangi Fakahau

Minister for Fisheries

Foreword

TTALAMU'AKI MEI HE 'EIKI MINISITA 'O E POTUNGAUE TOUTAI

Koe sekitoa ki hono faama'i 'o e ika, 'oku kau ia 'i he sekitoa 'oku vave 'ene fakalakalaka pea 'oku mahu'inga 'aupito ia ma'ae ngaahi ngaahi komuniti 'i Tonga ni. 'Oku hoko e faama'i 'o e ika, ko ha founga fakatupu pa'anga ia 'e taha pea toe hoko pe foki koha founga ke fakasi'isi'i ai mo hono touta'i 'o e ika mei he moana. 'E malava foki ke a'usia ha langa fakalakalaka 'oku tu'uloa ma'ae sekitoa ki hono faama'i 'oe ika, 'i hano fakamu'omu'a 'e Tonga ni hano faama'i ha fa'ahinga me'a mo'ui mei 'oseni 'oku mou'i lelei mo hao mei he mahaki. 'Oku toe mahu'inga foki ke fakahaofi mo malu'i 'ae ngaahi me'a mo'ui 'i he 'atakai fakaenatula 'o 'oseni.

'Oku hoko leva e malu mo hao 'a e me'a mo'ui 'o 'oseni koe ki ia ki hono fakasi'isi'i e faingamalie 'o e hoko 'a e ngaahi maumau ki he 'atakai 'i 'oseni mei he hoko kiai 'ae ngaahi mahaki 'o tupu mei he ngaahi me'amo'ui fakatupu maumau moe ngaahi me'a mo'ui 'oku 'omai mei tu'apule'anga.

Ko ha founga pule lelei 'e fokotu'u ki he hao mo malu 'a e me'amo'ui 'o 'oseni, 'oku mahu'inga 'aupito ia kene lava 'o hokohoko atu hono fakapapau'i 'e mo'ui lelei 'a e me'amo'ui, fakasi'isi'i moe faingamalie ke hoko 'ae ngaahi mahaki 'i he ngaahi feitu'u moe ngaahi me'a ngaue 'oku fakahoko 'aki hono faama'i 'o e ngaahi me'a mo'ui, kae lava ke ma'u ha ola lelei 'i hono faama'i 'e ngaahi me'a mo'ui.

Koe palani fakafonua koeni tene 'omai ha fa'unga ki ha founga lelei hono pule'i 'o e hoko ha ngaahi maumau fakapaiolosia ki he 'atakai 'o 'oseni. 'E toe hoko foki e palani koeni kene 'omai e kau faama ika, ngaahi pisinisi, moe kau 'inivesitoa pea pehee ki he pule'anga kenau ngaue fakataha ke fakapapau'i 'oku a'usia e ngaahi ola ne fokotu'u 'i he palani ni.

Koe fa'u foki 'a e palani koeni na'e fakahoko ia 'e he Potungaue Toutai moe tokoni 'a e 'Ofisi fakafeitu'u ki he Pasifiki moe komuniti (SPC), 'i ha hili ha fakataha fakafonua na'e fakahoko 'i Tonga ni 'i Ma'asi 2017.

Hon. Semisi Tauelangi Fakahau

Minisita ki he Potungaue Ngoue moe me'atokoni, Vao'akau moe Toutai

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List of abbreviations

ACIAR	Australian Centre for International Agriculture Research
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
EIA	environmental impact assessment
FAO	Food and Agriculture Organization of the United Nations
IRA	import risk analysis
JICA	Japanese International Cooperation Agency
MAF	Ministry of Agriculture and Fisheries
MEIDECC	Ministry of Meteorology, Energy, Information, Disaster Management, Climate Change and Communications
MPI-NZ	Ministry of Primary Industries (New Zealand)
NACA	Network of Aquatic Centres in Asia-Pacific
OIE	World Animal Health Organisation
SPC	Pacific Community

1 Introduction

1.1 Background

Aquaculture development in Tonga has been one of the key roles of the Ministry of Fisheries since the 1970s. Since then, aquaculture activities have mostly focused on research, and have been mainly conducted by the Aquaculture Section under the Ministry of Fisheries, which is funded by foreign donors such as Australian Centre for International Agriculture Research (ACIAR), Japanese Cooperation Agency (JICA), Food and Agriculture Organization of the United Nations (FAO) and the Pacific Community (SPC). The experiences and results of these past 'research' trials have encouraged the Government of Tonga and the Aquaculture Section to move Tonga's aquaculture towards commercial activities.

Since the 1970s many freshwater and marine species have been tried for aquaculture farming in the country, including finfish (mullets, tilapia, milkfish and pacu), molluscs (edible oysters, pearl oysters, mussels, giant clams, trochus and green snails) and seaweeds (*Cladosiphon* sp. and *Kappaphycus alvarezii*). It should be mentioned that research was mostly focused on marine organisms. Nowadays, aquaculture activities in Tonga are focused on molluscs, such as giant clams and marble pearl oysters, and aquarium-oriented aquatic organisms, such as various species of ornamental marine finfish. A brief overview of the most important commodities that are farmed in Tonga nowadays is provided below.

1.1.1 Mabe pearl oysters (*Pteria penguin*)

Pearl farming is one of the highest priorities of the Aquaculture Section in Tonga. Pearl farmers are farming half-pearl ('Mabe' pearl) *Pteria penguin* species, which was introduced to Tonga from Japan in 1975 by the Tasaki Pearl Company of Japan. Farmers are now relying on hatchery production of spats under an ACIAR funded project. Currently, there are 11 pearl farmers located in Vava'u, three Ha'apai and three in Tongatapu. The farming system that is used is a floating long line, which is deployed in a selected coastal area. In terms of experience and skill, most of the pearl farmers rely on the technical advice and information from Tonga Fisheries Mariculture Centre (Aquaculture Section).

The current production of marble pearl is 100 per cent devoted to the domestic market (local buyers and tourists), although foreign tourists and local people are indirectly exporting some of the production.

ACIAR is currently running a project on capacity building on crafting, pearl seeding and farm management. In July 2017, a new ACIAR project was launched, focused on post-harvest, value added and marketing processes.

1.1.2 Giant clams (*Tridacnidae*)

The culture of giant clams was initiated in 1989 under a project that was funded by ACIAR. JICA then took over in 1991 after the ACIAR project was terminated, and provided assistance until 1998. Under these two projects, breeding trails were conducted and were found to be very successful. Two species were introduced under the aforementioned ACIAR project (*Hippopus hippopus* and *Tridacna gigas*). The giant clams' hatchery production is still in progress under the Aquaculture Section activities. The species that are currently farmed include *Tridacna maxima*, *Tridacna squamosa* and *Tridacna derasa*. Spats produced at the hatchery are then sold to local exporters who export the animals to various aquarium companies in Europe. It should be mentioned that giant clam farming is the only aquaculture activity that has been implemented in Tonga since 1990s, and nowadays it is well place in the international ornamental market.

1.1.3 Seaweed (*Kappaphycus alvarezii*)

Various *Euchema* species of seaweed were introduced from Fiji to Tonga in the late 1980s and then again between 2013 and 2016. Between 2013 and 2016, an improved strain of *Kappaphycus alvarezii* was introduced from Indonesia under SPC technical assistance, and with technical support from Fiji Fisheries. In 2015, the Aquaculture Section of Tonga set up a target of producing 1000 seedlings before distribution to interested farmers. Seaweed seedlings reached 3000, but unfortunately some of them were harvested and dried out, and Cyclone Winston damaged the remainder in 2016. There are around 300 seedlings available at this point in various locations in Tonga.

1.1.4 Milkfish (*Chanos chanos*)

Milkfish were shipped from Kiribati in 2014 under an FAO technical programme. Milkfish fingerlings were cultured at Sopu by using pond culture systems. The results of the trials in Sopu were relatively successful and around 500 fry were transferred to Nomuka for culture in pens inside the lake. The majority of the stocked fry escaped to the lake due to Cyclone Winston. The current milkfish population in the lake is unknown, but the trial was encouraging up to that point.

1.1.5 Hatchery trials

1. Sea cucumber (*Holothuria lessoni*): Spawning trials were successfully run in 2016 and juveniles were raised. The trials were only focused on golden sandfish, which rely on live feed microalgae.

2. Trochus (*Trochus niloticus*): This species was introduced as a new commercial fisheries resource from Fiji between 1992 and 1994. It was successfully spawned in 1995. The main objective of trochus farming was to use these animals to control green and filamentous algae blooms in aquaculture tanks that are used for giant clam and green snail farming. The latest successful hatchery run took place in 2016 with technical assistance from JICA.

3. Sea urchin (*Tripneustes gratilla*): A successful spawning exercise was implemented in April 2017 with the support from JICA volunteers. The spawning was focused on the most common species that is collected from the wild in Tonga (*Tripneustes gratilla*).

4. Microalgae (*Isochrysis galbana*, *Chaetoceros muelleri* and *Tetraselmis* sp.): The culture of these three species started in 2016 with technical assistance from JICA, in order to be used as live feed for sea cucumbers, oysters and giant clams. The mass production has been relatively successful at this stage.

1.1.6 Aquatic biosecurity status in Tonga

Based on the results of the questionnaire on the status of aquatic biosecurity in Tonga that was completed by the Ministry of Fisheries in March 2017, it is evident that the aquaculture sector has clear and urgent needs on aquatic animal health management, import and export requirement guidelines, laboratory and quarantine facilities and specific capacity building. The present five-year strategy has been developed with the objective of covering existing gaps and addressing major needs that have been identified by the Ministry of Fisheries and other stakeholders in the aforementioned questionnaire. One of the most important aspects when promoting better aquatic biosecurity practices is governance. It should be noted that Tonga has a very comprehensive regulatory framework on aquatic biosecurity and general biosecurity, as can be seen in table 1 below, which is a very positive point for the long-term sustainability of the aquaculture sector.

Photo : Poasi Fale

Table 1. Overview of legal instruments related to aquaculture and aquatic biosecurity.

Legal instruments*	Date	Scope	Comments
Animal Disease Act	1978; amended in 2002	- Animal diseases - Surveillance - Reporting - OIE reporting - Import of animals and animal products - Diagnosis	To be updated Nothing on aquatics
Agriculture Commodities Export Act	2002	- Animal products to be imported into Tonga - List of authorised countries (NZ, Australia, Vanuatu, Fiji)	Only for terrestrial products coming into Tonga Meat: Authorised only from New Zealand, Australia and Vanuatu Vegetables and fruits: Authorised only from New Zealand Nothing on aquatics – to be developed
Plant Quarantine Act	1995	- Import plant products - Quarantine - Treatments - Possible countries of origin	Only for cassava and squash
Fisheries Act	2002; amended in 2004	- Fisheries management - Also for fish products being imported and exported	To be reviewed and updated
Diseases Plant Regulation	1995	- Based on the "Plant and Quarantine Act"	Implementation mechanisms of the Act to be reviewed and updated
Aquaculture Act	2003	- Aquaculture management and development	The aquatic biosecurity plan should be aligned with this Act
Aquaculture Management Regulation	2008	- Aquaculture management and development	Implementation mechanisms of the "Fisheries Act"
Customs and Excise Management Act	2007	- Import and export - Border control	Updated – no need for review

* The list of legal instruments – related directly or indirectly with aquaculture and aquatic biosecurity – is not exhaustive and it is based on the results of the National Stakeholder Consultation held in Tonga in March 2017.

1.2 Rationale

Aquatic biosecurity is a system of standardised protocols and measures that are put in place to deal with biological risks in aquatic environments (e.g., risk of diseases and pests, genetic pollution and invasive species). The main aims of aquatic biosecurity are to safeguard human health, the environment and national economies. Good aquatic biosecurity requires a holistic and a proactive approach between different governmental institutions, agencies and other key stakeholders at national, regional and international levels (e.g., quarantine, biosecurity, environment, customs, agriculture, fisheries, aquaculture, farmers, exporters, etc.).

The aquaculture sector in Tonga is still in its infancy, but it contributes, to a certain extent, to improving food and nutrition security as well as income generation. The most important farmed aquatic species are introduced (exotic) such as *Kappaphycus alvarezii, Pteria penguin* and tilapia, while others are native, such as giant clams and sea cucumbers. Furthermore, new aquatic species introductions are being pursued for further aquaculture development.

On top of that, aquatic animal diseases are a significant threat to the sustainability and productivity of the national aquaculture sector, which is known for its high status on aquatic animal health.

The geographical isolation of Tonga, the limited availability of specialist expertise and resources, and narrow prospects for development of specialist capability across multiple disciplines are just some of the significant challenges that the country faces in the implementation of sustainable aquaculture development and hence, effective aquatic biosecurity.

The strategy's mission is to build national capacities at all levels on aquatic biosecurity, in order to improve aquatic animal health management and meet international trade standards, as a way to ensure food safety, food security and income generation. The following areas will be covered under the different components of the strategy, which will include a detailed work-plan for the following aquatic biosecurity related aspects:

1. Aquatic animal diseases (including aquatic disease diagnosis, control, prevention, treatment, surveillance and reporting).
2. Imports and exports of live aquatic organisms and their products.
3. Responsible use and control of exotic aquatic species.
4. Compliance with international standards related to aquatic animal health and aquatic biosecurity.
5. Establishment of quarantine protocols and operations.
6. Emergency planning for disease outbreaks.
7. Capacity building.
8. Governance.
9. International linkages.

The Fisheries Division, in collaboration with national and international partners, will implement the National Aquatic Biosecurity Strategy during the five years from January 2018 until December 2022.

1.3 Stakeholders

Table 2 below provides a brief overview of major stakeholders involved in the aquaculture sector and in aquatic biosecurity at the national level.

Table 2. Main national stakeholders involved in aquaculture and aquatic biosecurity*

Government	Stakeholders
Ministry of Fisheries	Head of Aquaculture
	Aquaculture officers
	Hatchery technicians
	Head of Compliance and Enforcement Division
	CITES officer
Ministry of Agriculture and Food, Forest and Fisheries	Head of Livestock Division
	Head of Quarantine
	Quarantine officers
Ministry of Revenue and Custom	Border control staff
Marine and Ports Division	Port control
MEIDECC	EIA Officer
Private sector	Stakeholders
	Oyster farmers
	Seaweed farmers
	Association of Pearl Oyster farmers
	Ornamental specimens exporters
	National fisheries council
Donors and other partners	Stakeholders
	SPC
	JICA
	ACIAR
	FAO
	World Bank
	Chinese donors
	Foreign investment on licencing

** The list of stakeholders – related directly or indirectly with aquaculture and aquatic biosecurity – is not exhaustive and it is based on the results of the National Stakeholder Consultation held in Tonga in March 2017.*

1.4 Roles and responsibilities of main stakeholders

Table 3 summarises the most important roles and responsibilities of the different stakeholders that are listed in the previous chapter.

Table 3. Roles and responsibilities of national stakeholders on aquaculture and aquatic biosecurity.

Stakeholder*	Role/responsibility on aquatic biosecurity	Additional information
Fisheries officers	- CITES permits - Disease diagnosis, control, prevention and treatment - Disease surveillance - Disease reporting (national and international – OIE) - Import Risk Analysis for new species introductions - Export permit - Certificate of origin	Ministry of Fisheries planning to be in charge of all aspects related to aquatic biosecurity and aquatic animal health (e.g., health certification, export/ import permits, quarantine, border control, etc.).
Livestock officers	- Health permits	Ministry of fisheries to issue health permits for all aquatic organisms in the future.
Quarantine officers	- Inspection of imported live aquatic organisms at the border (airport/port) - Inspection of imported seafood products - Inspection of quarantine protocols	All inspections of imported live aquatic organisms at the border (airport/port) to be conducted by fisheries officers.
Environment officers	- Environmental impact assessment for new aquaculture ventures	To check if new aquaculture ventures involving species introductions need an import risk analysis – done in collaboration with private investors, fisheries officers, MEIDECC and MAF
Customs	- Assessment and validation of paperwork for aquatic species imports	Fisheries officers commonly assist custom officers.
Marine and port authority	- Border control	Fisheries officers commonly assist marine officers.
Private sector	- Provision of productive data - Provision of aquatic animal health data - Disease surveillance in the field	Private sector to cooperate with fisheries.

**The list of stakeholders – related directly or indirectly with aquaculture and aquatic biosecurity - is not exhaustive and it is based on the results of the National Stakeholder Consultation held in Tonga in March 2017.*

1.5 Government links

Table 4 below provides the links to the ministerial websites that are directly or indirectly related to aquatic biosecurity.

Table 4. Government links related to aquatic biosecurity.

Ministries	Websites
Ministry of Fisheries	www.tongafish.gov.to
Quarantine Division	www.quarantine.gov.to
Livestock Division	www.mafff.we.bs
Marine and Ports	http://www.mic.gov.to/infrastructure/marine-a-ports
Custom Division	www.revenue.gov.to
MEIDECC	www.ecc.gov.to

2 Guiding documents of the strategy

2.1 Vision

The Government of Tonga and the national aquaculture are sector working together to minimise the introduction and spread of biological risks (e.g., pathogens, invasive species) in aquatic environments.

2.2 Mission

The mission of this strategy is to build national capacities at all levels on aquatic biosecurity, in order to improve aquatic species health management and meet international trade standards, as a way of ensuring food safety, food security and income generation.

2.3 Main goals

The effective implementation of this strategy will achieve the following goals:

1. Improve the sustainability and productivity of the aquaculture sector in Tonga.
2. Maintain the traditional and cultural uses of aquatic resources in the country.
3. Facilitate the development of potentially new aquaculture production systems.
4. Maintain and strengthen the capacity of the aquaculture sector to engage in fair trading practices.
5. Protect the health and biodiversity of aquatic organisms and aquatic ecosystems.
6. Improve knowledge on health status of farmed aquatic species.

2.4 Guiding principles

- Science-based standards.
- Transparent and collaborative processes.
- Essential, logical and feasible guidelines.
- Consistency with international standards.

2.5 Scope

This strategy is mostly focused on two areas within the broad concept of aquatic biosecurity:

1. Aquatic species health management: including aquatic species disease diagnosis, prevention, control, treatment, surveillance and national/international reporting, with special emphasis on farmed aquatic species.
2. Aquatic species imports and exports: including the development and/or update of national standards for live aquatic species and their products, with special emphasis on quarantine procedures/operations, certification schemes, permissions, border control, import risk analysis and environmental impact assessment.

It should be noted that capacity building, institutional strengthening, research and education, governance and emergency planning are considered as crosscutting issues under the present national strategy.

3 Components and work-plan

A detailed work-plan for the five-year strategy is provided below (January 2018 to December 2022).

3.1 Aquatic species health management

Background: This component is focused on the management of diseases (in animals) and pests (plants and macroalgae/seaweed) of the most important farmed aquatic species in Tonga, including disease screening, diagnosis, control, treatment, surveillance and reporting at national and international levels (OIE).

Expected outcome 1: Aquatic species health is managed in order to maintain and improve the current health status in the country.

Activities	Timeline ("X" marks the implementation year)					Responsible stakeholders	Additional information
	2018	2019	2020	2021	2022		
Expected outcome 1: Aquatic species health is managed in order to maintain and improve the current health status in the country.							
1.1 Development of a 'national pathogens list'	X					- Ministry of Fisheries - Aquaculture farmers - Hatchery technicians - International organisations such as OIE, SPC, FAO, others	The national pathogens list will be developed based on specific selection criteria previously agreed on by the fisheries and aquaculture officers (e.g., disease relevant for trade, highly pathogenic, infectious, with robust diagnostic tests, among others).
1.2. Screening of listed pathogens	X					- Ministry of Fisheries - Aquaculture farmers - Hatchery technicians - International organisations such as OIE, SPC, FAO, others	A screening exercise for OIE-listed pathogens affecting farmed aquatic species in Tonga was conducted in March 2017; therefore, this step could be considered as already implemented.
1.3. Development of a national surveillance programme for listed pathogens, based on the screening results	X					- Ministry of Fisheries - Aquaculture farmers - Hatchery technicians - International organisations such as OIE, SPC, FAO, others	Targeted and general surveillance actions will be summarised in a national surveillance programme.
1.4. Implementation of the surveillance programme	X	X	X	X	X	- Ministry of Fisheries - Aquaculture farmers - Hatchery technicians - International organisations such as OIE, SPC, FAO, others	Involves relevant stakeholders within the aquaculture sector.
1.5. Record keeping of surveillance data	X	X	X	X	X	- Ministry of Fisheries - International organisations such as OIE, SPC, FAO, others	The aquaculture manager will be responsible for keeping records of the targeted and general surveillance actions implemented at national level.
1.6. Establishment of a basic laboratory equipment for diagnosis of aquatic diseases at the government hatchery	X					Ministry of Fisheries Hatchery technicians International organisations such as OIE, SPC, FAO, others.	Basic laboratory equipment for parasite and bacterial diagnosis will be purchased and installed at the existing aquaculture laboratory of the government hatchery.
1.7. National training on disease management to aquaculture officers, hatchery technicians and farmers	X		X		X	- Ministry of Fisheries - Aquaculture farmers - Hatchery technicians - International organisations such as OIE, SPC, FAO, others	National training for key stakeholders (farmers, hatchery technicians and aquaculture officers) will be conducted on aquatic diseases, including clinic signs, symptoms, diagnosis, treatment, prevention and reporting.
1.8. National training on OIE reporting to aquaculture manager	X		X		X	- Ministry of Fisheries - International organisations such as OIE, SPC, FAO, others	Training on the OIE standards and the OIE reporting will be given to the OIE national focal point on aquatic animals.
1.9. Reporting to the OIE on aquatic species health status (each semester)	X	X	X	X	X	- Aquaculture manager (OIE national focal point for aquatic species diseases)	The SPC aquatic biosecurity specialist will provide technical assistance every six months on OIE reporting.

3.2 Import and export requirements

Background: Development, validation and enforcement of feasible import and export guidelines for live aquatic organisms and their products is one of the most urgent priorities for the Ministry of Fisheries of Tonga. These guidelines should be aligned with international standards set by OIE, CITES and FAO, in order to facilitate international trade and open Tonga to new market opportunities.

Expected outcome 2: Transparent, inclusive and comprehensive import and export requirements are developed and enforced.

Activities	Timeline					Responsible stakeholders	Additional information
	2018	2019	2020	2021	2022		
Expected outcome 2: Transparent, inclusive and comprehensive import and export requirements are developed and enforced.							
2.1. Development of Import Risk Analysis (IRA) guidelines for introduction of live aquatic organisms	X					- Ministry of Fisheries - International organisations such as OIE, SPC, FAO, others	Basic guidelines on risk assessment, risk management and risk communication for imports of aquatic organisms.
2.2. National training on Import Risk Analysis development	X		X		X	- Aquaculture officers - Fisheries officers - Livestock officers - Quarantine officers - Environment officers - International organisations such as OIE, SPC, FAO, others	Training to develop IRAs for future aquatic species introductions.
2.3. Development of quarantine protocols and operations for live aquatic organisms	X					- Ministry of Fisheries - International organisations such as OIE, SPC, FAO, others	Basic quarantine protocols and operations based on OIE and FAO standards.
2.4. National training on quarantine implementation and inspection	X		X		X	- Aquaculture officers - Hatchery technicians - Fisheries officers - Quarantine officers - International organisations such as OIE, SPC, FAO, others	Training to run and inspect (abroad, when necessary) quarantine facilities.
2.5. National training on health certification	X		X		X	- Aquaculture officers - Hatchery technicians - Fisheries officers - Quarantine officers - International organisations such as OIE, SPC, FAO, others	Training on specific templates and guidelines for health certification of live aquatic organisms, with special emphasis on ornamental species.
2.6. National training on farmed aquatic species identification (imports and exports)	X	X			X	- Aquaculture officers - Hatchery technicians - International organisations such as OIE, SPC, FAO, others	Training on identification and taxonomy of live aquatic organisms, with special emphasis on ornamental species.
2.7. Establishment of a basic quarantine area at the Government hatchery	X					- Ministry of Fisheries - International organisations such as OIE, SPC, FAO, others	Basic equipment will be purchased to establish a quarantine area at the government hatchery.

3.3 On-farm biosecurity

Background: General biosecurity practices at farm level, for grow-out operations and hatcheries need to be improved, as highlighted by farmers and aquaculture officers during the national stakeholder consultation that was conducted in early 2017. As an example, basic hygiene practices implemented by pearl farmers, seaweed farmers and hatchery technicians should be reviewed; gaps need to be assessed and improved strategies implemented in order to avoid the spreading and increased prevalence of existing pathogens.

Expected outcome 3: On-farm (grow-out and hatchery) biosecurity practices are improved.

Activities	Timeline					Responsible stakeholders	Additional information
	2018	2019	2020	2021	2022		
Expected outcome 3: On-farm biosecurity practices are improved.							
3.1. Review of current hygiene practices implemented by aquaculture farmers	X					- Ministry of Fisheries - Aquaculture farmers - International organisations such as OIE, SPC, FAO, others	General hygiene practices and protocols implemented by all types of aquaculture farmers (oyster, seaweed, giant clam, and sea cucumber) will be reviewed, with special emphasis on seeding protocols and translocation of organisms.
3.2. Training on improved hygiene practices at farm level, based on the assessment that has been done	X	X	X	X	X	- Ministry of Fisheries - Aquaculture farmers - International organisations such as OIE, SPC, FAO, others	Training to farmers based on the needs assessment.
3.3. Review of current hygiene practices implemented at the government hatchery	X					- Ministry of Fisheries - Hatchery technicians - International organisations such as OIE, SPC, FAO, others	Hatchery biosecurity practices and operations at the government hatchery – such as cleaning, disinfection, water treatments and water quality control – will be reviewed.
3.4. Training on improved hygiene practices at hatchery level, based on the assessment that has been done	X	X	X	X	X	- Ministry of Fisheries - Hatchery technicians - International organisations such as OIE, SPC, FAO, others.	Training to hatchery technicians based on the needs assessment.

Photo : Poasi Fale

3.4 Governance

Background: Existing legal instruments and regulatory framework on aquaculture, general biosecurity (including terrestrial animals and plants) and aquatic animal health are key for the sustainable implementation of this strategy. As standard setting bodies on plant and animal health – such as the OIE, IPPC and FAO – have highlighted, good governance is essential for the long-term sustainability of the agriculture sector and to assure that coherent biosecurity measures are implemented.

Expected outcome 4: National regulatory framework on aquatic biosecurity is updated and enforced.

Activities	Timeline					Responsible stakeholders	Additional information
	2018	2019	2020	2021	2022		
Expected outcome 4: National regulatory framework on aquatic biosecurity is updated and enforced.							
4.1. Review of current regulatory framework (Acts, bills, regulations and policies) related to aquatic biosecurity	X					- Aquaculture manager - Fisheries officers (legal adviser) - Livestock officers - Quarantine officers - Environment officers - International organisations such as OIE, SPC, FAO, others	See Table 1 for details
4.2. Update of current regulatory framework on aquatic biosecurity, if needed	X	X				- Aquaculture manager - Fisheries officers - Livestock officers - Quarantine officers - Environment officers - International organisations such as OIE, SPC, FAO, others	When needed and agreed on by relevant national partners.
4.3. Development of new regulations on aquatic biosecurity, if needed	X	X	X	X	X	- Aquaculture manager - Fisheries officers - Livestock officers - Quarantine officers - Environment officers - International organisations such as OIE, SPC, FAO, others	When needed and agreed on by relevant national partners.
4.4. Provision of assistance to the enforcement of regulatory instruments on aquatic biosecurity	X	X	X	X	X	- Aquaculture manager - Fisheries officers - Livestock officers - Quarantine officers - Environment officers - International organisations such as OIE, SPC, FAO, others	When needed and agreed on by relevant national partners.
4.5. Awareness raise among policy makers and public on the importance of aquatic biosecurity	X	X	X	X	X	- Fisheries Division - Livestock Division - Quarantine Division - Environment Division - International organisations such as OIE, SPC, FAO, others	Policy makers and the public will have a better understanding of the concept of aquatic biosecurity and its relevance for future aquaculture development and aquatic resources conservation and management.

Photo : Poasi Fale

3.5 Emergency planning

Background: For the time being, Tonga does not have an emergency or contingency plan for animal disease outbreaks (neither terrestrial nor aquatics). This component is focused on the development, through a consultative and transparent process, of a basic emergency plan for animal diseases, which will include both terrestrial and aquatic animals. Under this plan, the steps to be undertaken and responsibilities to be assumed by different government officers and civil society will be clearly defined in case of a disease emergency.

The emergency plan will be developed through a national consultative process, involving the necessary stakeholders, such as quarantine officers, livestock officers, fisheries officers, environment officers, private sector, police, etc. The final version of the emergency plan will be shared with all stakeholders that are involved. Furthermore, it will be tested through a simulacrum of a disease outbreak, in order to identify any weak points.

Expected outcome 5: Tonga is better prepared for aquatic disease outbreaks/crisis through the development of an 'emergency plan'.

Activities	Timeline					Responsible stakeholders	Additional information
	2018	2019	2020	2021	2022		
Expected outcome 5: Tonga is better prepared for aquatic diseases outbreaks/crisis through the development of an 'emergency plan'.							
5.1. Development of an 'emergency plan for diseases outbreaks' through a collaborative process	X					- Aquaculture manager - Fisheries officers - Livestock officers - Quarantine officers - Environment officers - Police - Oyster Farmers (association representatives) - Exporters - International organisations such as OIE, SPC, FAO, others	The head of the Livestock Division under the Ministry of Agriculture will be contacted in order to assess the possibility of developing a general emergency plan for all animal diseases, including terrestrial and aquatic diseases.
5.2. Training on the implementation of the aforementioned 'emergency plan'	X	X		X	X	- Aquaculture manager - Fisheries officers - Livestock officers - Quarantine officers - Environment officers - Police - Farmers (association representatives) - Exporters - International organisations such as OIE, SPC, FAO, others	Training to all national partners involved in emergency preparedness.
5.3. Testing of the 'emergency plan'	X	X	X	X	X	- Aquaculture manager - Fisheries officers - Livestock officers - Quarantine officers - Environment officers - Police - Farmers (association representatives) - Exporters - International organisations such as OIE, SPC, FAO, others	Testing of the emergency plan as a real exercise, to assess possible weak points.

Photo : Poasi Fale

3.6 International linkages

Background: Tonga has been receiving technical and financial assistance on aquaculture from international partners, such as ACIAR, SPC, FAO and JICA for many years. The linkages and exchanges with international organisations and institutions that are involved in aquatic animal health should be maintained, promoted and strengthened as a feasible way to increase the efficacy and impact of the present strategy.

Expected outcome 6: International collaboration on aquatic biosecurity is strengthened.

Activities	Timeline					Responsible stakeholders	Additional information
	2018	2019	2020	2021	2022		
Expected outcome 6: International collaboration on aquatic biosecurity is strengthened.							
6.1. Review of current international partners on aquaculture and aquatic biosecurity (e.g., SPC, FAO, JICA, ACIAR)	X					- Ministry of Fisheries - International organisations such as OIE, SPC, FAO, others	See section 1.4. for details.
6.2. Strengthen existing international linkages on aquatic biosecurity	X	X	X	X	X	- Ministry of Fisheries - International organisations such as OIE, SPC, FAO, others	With SPC as a facilitator.
6.3. Establishment of new international linkages on aquatic biosecurity (OIE, NACA, MPI-NZ)	X	X	X	X	X	- Ministry of Fisheries - International organisations such as OIE, SPC, FAO, others	With SPC as a facilitator.

Photo : Poasi Fale

Photo : Poasi Fale

4 Implementation strategies

The Aquaculture Section under the Fisheries Division of the Ministry of Fisheries of Tonga, in collaboration with the SPC Aquaculture Section and other international and national stakeholders and partners, will implement this five-year strategy. The specific partners involved in each one of the activities of the six expected outputs are detailed in section 3 of the strategy. The coordinator of the strategy at national level will be the Aquaculture Manager.

A national task force on aquatic biosecurity will be established in December 2017/January 2018, prior the implementation of the strategy. This national task force will be composed of the following members:

- Two members from the Fisheries Division: Aquaculture manager and fisheries officer(s) (policy, CITES, etc.).
- One member from the Livestock Division.
- One member from the Quarantine Division.
- One member from the Environment Division.
- Two farmers' representatives (to be selected by fisheries)
- One exporters' representative (giant clams and marine finfish).
- One representative from local non-governmental organisations who is involved in biodiversity conservation and management.
- Optional: External expert.

The national task force on aquatic biosecurity will be in charge of the monitoring and evaluation of the strategy, as is described in the following section, section 5 of the strategy. In addition, a smaller sub-group of this national task force – *the implementing committee* – which is composed of the two fisheries/aquaculture officers, two farmers' representatives and one exporters' representative, will be in charge of the real implementation of the strategy during the five-year period. The implementing committee will meet every three to four months to review the status of implementation of the strategy within the previous three to four month period and organise the logistics and administrative procedures necessary for the implementation of activities in the following three to four month period. The implementing committee will be the operational group of the strategy, in charge of organising the trainings, purchasing of equipment, conducting needs assessment, etc.

Different logistical and administrative arrangements will be needed for the different activities that are detailed in section 3, which will be discussed and agreed on by the task force technical and financial support, although additional sources of funding and co-funding from the government will be sought when necessary.

5 Monitoring and evaluation

As it has been said in the previous section, a national task force on aquatic biosecurity will be established prior the implementation of the strategy in January 2018. The national task force will be in charge of the monitoring and evaluation of the strategy. The members of the national task force on aquatic biosecurity will hold annual meetings to ensure the smooth running of the strategy.

This task force should ensure that the national strategy on aquatic biosecurity is addressing biological risks in aquatic environments by using the minimum level of resources for effective implementation. Main roles of the monitoring and evaluation task force will be as follows:

- Ensuring the timely and efficient achievement of expected objectives and outcomes.
- Ensuring the timely and efficient implementation of activities.
- Acting in case of disease-related emergencies, as will be defined in the emergency plan.
- Providing technical assistance when needed.
- Assessing suitable methodologies for the dissemination of relevant achievements.

The progress in implementation of the plan should be reported in the Ministry of Fisheries annual report.

Annex 1

Koe Palani Fakafonua ‘a Tonga ki he Malu ‘o e ngaahi me’a mo’ui ‘o ‘Oseni

1 Talateu

Koe malu moe hao ‘o e ngaahi me’a mo’ui ‘i ‘oseni (Aqautic biosecurity), ko ha ngaahi me’afua ia kuo fa’u mo fokotu’utu’u ke fakahoko ‘i ha hoko ha ngaahi fakatamaki pe nunu’a kovi fakanatula pe paiolosia ki he ‘atakai ‘o ‘oseni. ‘Oku kau ki heni e nunu’a kovi fakatupu ha ngaahi mahaki ‘i he ‘oseni, ‘uli’i ‘o e ‘atakai fakatupu mei he ngaahi me’a mo’ui fakasenitiki (genetic) pe koe maumau e ‘atakai ‘o ‘oseni mei ha me’a mo’ui fo’ou ‘oku hu mai ki ‘oseni. Koe tefito’i taumu’a foki hono malu’i ‘o e ngaahi me’a mo’ui ‘i ‘oseni ko ha founga malu ia ki he mo’ui lelei ‘ae fa’ahinga ‘oe tangata, pehe ki he malu ‘ae ‘atakai moe langa faka’ekonomika ‘o e fonua. Ko ha founga lelei ki hono malu’i e ngaahi me’a mo’ui mei ‘oseni, ‘oku fiema’u ke longomo’ui ‘ae ngaue fakataha moe ngaahi kupu ngaue ‘oku nau felalave’i ‘o tatau pe ki he ngaahi Potungaue ‘ae Pule’anga, ngaahi kautaha taautaha, pehe ki he ngaahi kautaha kehe pe ‘o hange koe Va’a ngaue ’a e Kolonitini mo e malu ‘ae ngaahi me’a mo’ui, Potungaue ‘Atakai, Potungaue Kasitomu, Potungaue Ngoue, Potungaue Toutai, Kau toutai ‘oku nau faama’i ngaahi me’a mo’ui mei tahi, kau ngoue, ngaahi kautaha ‘oku nau uta atu ki tu’apule’anga ngaahi koloa mei ‘oseni mei Tonga ni.

Koe sekitoa ki he faama ika ‘oku lolotonga ‘i he tu’unga langalanga hake ‘i Tonga ni, ka ‘e malava e sekitoa ni ke tokoni ki hono fakalelei’i ‘o e malu mo hao ‘ae ma’u’anga me’atokoni pea pehe ki he ‘ene tokoni ki hono fakalelei’i ‘ae ma’u’anga pe fakatupupa’anga ma’ae kakai e fonua. Koe ngaahi me’a mo’ui mahu’inga ‘oku lolotonga fakahoko hono faama’i ‘i Tonga ni ‘oku kau kiai e ngaahi me’a mo’ui ‘oku ‘omai mei he fonua muli ‘o hange koe limu , tofeloa moe lapila, pea pehe foki ki he ngaahi me’a mo’ui fakalotofonua pe ‘o hange koe vasuva moe mokohunu. Tanaki atu kiai, ‘oku ‘iai moe ngaahi me’amo’ui fo’ou ‘oku ‘omai mei he ngaahi fonua kehe ‘o fakataumu’a pe ki hono fakalakalaka’i e tu’unga koia hono faama’i e ika. Neongo e fakalakalaka koeni hono faama’i e ika, ka koe ngaahi mahaki ‘e malava ke fakatupu mei he ngaahi me’a mo’ui ko eni ‘e hoko koe makatukia’anga ki ha ola lelei mei he sekitoa fakafonua ko eni ki hono faama’i e ika, ‘aia ‘oku ‘iai ‘ae ‘ilo’ilopau ‘e ‘uesia lahi ‘ehe ngaahi mahaki ‘ae tu’unga ko eni ‘o e malu moe mo’ui lelei ‘ae ngaahi me’a mo’ui.

‘Oku hoko foki e mama’o ‘a Tonga ni ‘i he’ene tu’u faka siokalafi, si’isi’i moe kakai ‘oku taukei fe’unga ki he mala’e ko ‘eni ‘o e faama’i e ika, pea pehe ki he ma’u’anga tokoni, si’isi’i moe faingamalie ki hono fakalakalaka’i pe teu’i ‘ae tu’unga taukei, ko ha ngaahi tefito’i me’a mahu’inga ia ‘oku fehangahangai moe fonua ‘i he feing koeni ke fakahoko mo muimu’i ’ae fakalakalaka’i ‘ae tu’unga hono faama’i e ika pea ‘i he taimi tatau ke malu pe ‘a e ngaahi me’a mo’ui ‘o ‘oseni. ‘Oku fengaue’aki vaofi leva e Potungaue Toutai moe ngaahi hoa ngaue ‘oe Potungaue ‘i Tonga ni mo tu’apule’anga ki hono fakahoko ‘o e Palani Fakafonua ‘a Tonga ki hono malu’i ‘ae ngaahi me’a mo’ui mei ‘Oseni ‘i he ta’u ‘e 5 ka hoko mai ‘o kamata mei Sanuali 2018 ki Tisema ‘o e 2022.

2 Ngaahi tuhulu pe fakahinohino ki he Palani ngaue

2.1.Visone: Ke ngaue fakataha ‘ae Pule’anga Tonga pea pehe ki he sekitoa fakafonua ki hono faama’i e ika ki ha founga e malava ke fakasi’isi’i ai ha mafola pe nunu’a kovi fakapaiolosia (biological) ‘oku kaungatonu ki he ‘atakai koia e ngaahi me’a mo’ui mei ‘oseni.

2.2. Misiona: Ke langa hake ‘ae tu’unga malu ‘o e ngaahi me’a mo’ui mei ‘oseni ki he tu’unga fakafiemalie pea ‘e malava ai ke tokoni ki hono pule’i mo fakalelei’i ‘a e mo’ui lelei ’o e ngaahi me’a mo’ui ke a’usia ‘a e tu’unga fefakatau’aki fakavaha’a Pule’anga, ‘a ia koe founga ia ‘e lava ke fakapapau’i ‘oku malu ‘ae ma’u’anga me’atokoni pea pehe ki he ma’u’anga mo’ui mo fakapapau’i ‘e tokoni ki he pa’anga hu mai pe fakatupupa’anga ma’ae fonua.

2.3. Ngaahi tefito’i fakakaukau koe tuhulu ‘oe palani

- Ngaahi mo’oni’i me’a fakasaienisi
- Ngaahi founga ngaue ‘oku ha ki tu’a mo ngaue fakataha
- Founga fakahoko ngaue ‘oku mahu’inga, ‘uhinga malie pea faingofua ke fakahoko
- Founga fakahoko ngaue ke fenapasi lelei moe tu’unga ngaue fakavaha’a pule’anga

2.4. Ngaahi konga ‘oku lave kiai e palani

1. **Founga pule’i e tu’unga mo’uilelei e ngaahi me’a mo’ui mei ‘oseni:** ‘Oku kau heni ‘ae ngaahi founga ki hono faito’o, malu’i, ta’ota’ofi, siofi pe muimu’i ha ngaahi lipooti fakalotofonua pe fakavaha’a pule’anga ‘oe ngaahi mahaki mei he ngaahi me’a mo’ui ‘o fakamamafa pe ki he ngaahi me’a mo’ui ‘oku faama’i.
2. **Ngaahi me’a mo’ui mei ‘oseni ‘oku hu atu mo hu mai mei tu’a pule’anga:**‘Oku kau heni ‘ae sio ki hono tu’unga

fakalakalaka ‘o e palani pea mo toe hiki’i ‘ae tu’unga fakalotofonua ‘oe ngaahi me’a mo’ui ‘oku hu atu mo hu mai ‘o fakamamafa ki he founga hono sivi fakakolonitini, founga hono foaki ha tohi fakamo’oni, tohi ngofua, founga malu’i ‘oku fakahoko he ngaahi ngatangata’anga (border control), ‘analaiso ngaahi nunu’a kovi ‘oe ngaahi me’a mo’ui ‘oku hu mai mei tu’apule’anga, pehe foki ki hono sivisivi’i e ngaahi uesia faka’atakai.

3 Fa’unga ‘oe palani ngaue

3.1. Founga pule’i e tu’unga mo’ui e ngaahi me’a mo’ui mei ‘oseni

Puipuitu’a: Koe konga ‘uluaki e fa’unga ‘oe palani ‘oku fakataumu’a pe ki hono pule’i e ngaahi mahaki (fangamanu) pea pehe ki he ngaahi me’a mo’ui maumau (ki he ‘akau pea pehe ki he fa’ahinga ‘oe limu) ‘oku kaungatonu ki he ngaahi me’a mo’ui ‘oku malava ke faama’i ‘i Tonga ‘o kau ai ‘a hono sivi ha ngaahi mahaki (diseases), faito’o, malu’i, muimu’i mo lipooti hono tu’unga ‘o tatau pe fakalotofonua mo tu’apule’anga (Lipooti e tu’unga ha mahaki (diseases) ‘oku hoko ha fonua – OIE Animal Health Organisation).

Ola 1: Pule’i lelei e tu’unga mo’ui lelei ‘o e ngaahi me’a mo’ui ‘o ‘oseni ke lava ‘o fakalakalaka’i ‘a e tu’unga mo’ui lelei ‘o e fonua.

3.2 Ngaahi fiema’u ki he hu atu moe hu mai ‘o e ngaahi me’a mo’ui mei tu’apule’anga.

Puipuitu’a: Koe fiema’u vivili ‘ae Potungaue Toutai ko hano fa’u mo fakapapau’i ha e ngaahi tu’utu’uni ngaue ‘e malava ke fakahoko ‘i hono hu atu moe hu mai ‘ae ngaahi me’a mo’ui mei ‘oseni. Koe ngaahi tu’utu’uni koia, kuopau pe ke fenapasi lelei moe ngaahi fiema’u fakavaha’a pule’anga kuo ‘osi fokotu’u ‘e he ngaahi Kautaha Fakamamani lahi ki he lipooti ngaahi mahaki ‘oku ne uesia me’a mo’ui mei tahi (OIE), Konivesio ki he fefakatau’aki ‘ae ngaahi me’a mo’ui kuo mei ‘osi (CITES), pea moe kautaha Fakamamani lahi ki he me’a tokoni (FAO), pea ‘e malava ai ‘a Tonga ke fakaava mai ha ngaahi faingamalie ki ha maketi fo’ou ‘i he kaha’u.

Ola 2: Ko hano fa’u mo muimui’i ofi ha tuhulu ‘oku ‘ata ki tu’a ki he kakai ‘oe fonua ki hono hu atu mo hu mai ‘o e ngaahi me’a mo’ui mei tu’apule’anga

3.3. Malu’i e ngaahi me’a mo’ui ‘i he feitu’u ‘oku fakahoko ai e faama

Puipuitu’a: ‘Oku fiema’u foki ke fakalakalaka ange ‘i he founga angamaheni ‘a hono malu’i e ngaahi me’a mo’ui ‘i he taimi ‘oku fakahoko ai hono faama’i, ‘o tatau pe he feitu’u ‘oku fakahoko ai hono fakafanau’i pea pehe ki he feitu’u ‘oku tauhi ai ke lalahi fe’unga, ‘o hange koia na’e ‘ohake ‘e he kau faama moe kau ‘Ofisa toutai lolotonga hono fakahoko ‘ae talatalanoa moe ngaahi sekitoa fakafonua, ‘aia na’e fakahoko he konga kimu’a ‘oe ta’u 2017. ‘O fakatata’aki ‘eni, koe founga haisini (hygiene) anga maheni ‘oku ngaue’aki ‘e he kau faama tofe, kau faama limu pea pehe ki he kau tekinisini ‘oku ngaue ki hono fakafanau’i e me’a mo’ui, ‘oku ‘iai ‘a e totonu ke toe vakai’i pe siofi ‘ae founga ngaue ke fakasi’isi’i ai ‘ae mafola pe koe toe lahiange ai ha faingamalie ke hu mai ai fanga ki’i manu maumau ‘o fakatupu ha ngaahi mahaki (disease).

Ola 3: Fakalakalaka ange mo malu ‘ae me’a mo’ui ‘i he feitu’u ‘oku faama’i ai

3.4: Fa’unga Pule

Puipuitu’a: Koe ngaahi lao lolotonga ki hono fa’ama’i e ika, ngaahi founga lolotonga ki he malu ‘o e me’a mo’ui (kau atu kiai e ngaahi manu totolo moe ngaahi fa’ahinga e ‘akau), pea kau atu kiai moe mo’ui lelei e ngaahi me’a mo’ui mei ‘oseni ‘ae kii tefito ki ha ola lelei ‘e ma’u ‘i hono fakahoko ‘o e palani ko ‘eni. Koe ngaahi sino ngaue fakamamani lahi ‘oku nau poupou ki he mo’ui lelei ‘ae me’amo’ui ‘o tatau ki he ‘akau moe fangamanu ‘o hange koe OIE, IPPC, FAO, ‘oku nau hulu’i pe fakamamafa’i koe fa’unga pule lelei koe makatu’unga ia e lava ke tolonga mo tu’uloa ‘ae ngaahi ngaue ko eni ki he sekitoa ki hono faama’i e ika, mo fakapapau’i ai pe ‘e fakahoko mo muimui’i ‘a e ngaahi me’afua ki he malu ‘ae ngaahi me’amo’ui.

Ola 4: Fakalelei’i mo fakahoko e ngaahi lao fakaloto fonua ki he malu ‘ae me’a mo’ui ‘i ‘oseni.

3.5. Koe palani ka hoko ha fakatamaki

Puipuitu’a: Koe tu’unga koia ‘oku ‘i ai ‘a Tonga ni he taimi ni, ‘oku te’eki ke fa’u ha palani ki ha hoko ha fakatamaki ki he me’a mo’ui koe ‘uhi koe uesia ‘e ha ngaahi mahaki (‘o tautau pe he fangamanu moe me’a mo’ui mei ‘oseni). Koe konga ko ‘eni ‘o e palani ‘oku nofo taha pe ki hono fa’u mo fokotu’utu’u ha palani ‘i ha founga ke ‘ata ki tu’a pea talanoa moe kakai ‘o e fonua ki ha hoko ha fakatamaki ‘oku ne uesia ‘a e me’amo’ui ‘a ia ‘e kaungatonu ki ai ‘ae fangamonumanu pea pehe ki he me’a mo’ui mei ‘oseni.

‘I he palani ko ‘eni, ‘oku ‘i ai ngaahi fokotu’utu’u ke fakahoko pe fakafatongia’aki ‘a e kau ‘ofisa mei he ngaahi potungaue, pehe ki he ngaahi kautaha fakafo’ituitui, ‘a ia ‘e fakamahino ai honau fatongia takitaha ‘oka hoko ha fakatamaki tautau tefito ki ha mafola ha mahaki ‘i ‘oseni.

Ola 5: Palani ki ha fakatamaki ‘e hoko ‘ ha hoko mafola ha mahaki he ‘oseni.

3.6. Kupu fengaue’aki Fakavaha’a Pule’anga

Puipuitu’a: ‘Oku lolotonga ‘inasi foki ‘a Tonga ni he ngaahi tokoni fakatekinikale mo fakapa’anga ki hono faama’i ‘oe ika mei he ngaahi hoa ngaue mei tu’apule’anga hange koe Va’a tokoni fakatekinikale moe fakatototolo ki he Ngoue ‘ae Pule’anga ‘Aositelelia (ACIAR), Komisoni ki he ngaahi fonua he Pasifiki (SPC), pea pehe foki moe Va’a tokoni fakatekinikale ‘ae Pule’anga Siapani (JICA) ‘i he ngaahi ta’u lahi. Koe ngaahi kupu fekau’aki fakavaha’a Pule’anga ko ‘eni ‘oku nau kau ‘i hono tokangaekina ‘ae tu’unga mo’ui lelei ‘ae ngaahi me’a mo’ui mei ‘oseni, pea ‘oku totonu leva ke kei tauhi lelei ‘ae ngaahi va ngaue vaofi ko eni, ko ha founga ia e lava lelei ke kei pukepuke ai ‘ae ma’uma’uluta ‘ae ola lelei hono muimui ofi e palani ngaue ko eni.

Ola 6: Fakamalohi’i ‘ae tu’unga ngaue vaofi moe ngaahi kautaha Fakavaha’a Pule’anga ki hono malu’i e ngaahi me’a mo’ui mei ‘oseni.

4 Ngaahi founga hono fakahoko ‘o e palani

Koe Va’a Ngaue ko ‘eni ki hono faama’ e ika ‘a ia ‘oku malumalu ia he Potungaue Toutai ‘a Tonga, te nau fengaue’aki vaofi mo e ngaahi kautaha fakavaha’a Pule’anga pea pehe moe ngaahi kautaha fakalotofonua ‘o fakataumu’a ki hono fakahoko ‘a e palani ngaue fakata’u 5 ko ‘eni. Koe pule ‘o e Va’a ngaue koeni ki hono faama’i ‘o e ika ‘ae Potungaue Toutai ‘e fakafatongia’aki hono fokotu’utu’u e ngaahi ngaue ki he palani. ‘E fokotu’u leva moe Kulupu Ngaue fakafonua ki he hao ‘a e me’a mo’ui ‘o ‘oseni ‘i Tisema 2017/pe Sanuali 2018, ki mu’a pea fakohoko e palani ngaue ni. Koe kulupu fakafonua makehe ko eni, kuopau ke fau’aki ia ‘ae kau memipa ko eni:

- Memipa mei he Potungaue Toutaii(2) (Policy, CITES)
- Memipa mei he Va’a ngaue ki he Fanga monumanu (1), Memipa mei he Va’a Ngaue ki he Kolonitini (1) pea pehe foki ki he Va’a Ngaue ki he ‘Atakai (1)
- Fakafofonga mei he kau faama ika (2) (fili pe ‘e he Potungaue Toutai)
- Fakafofonga mei he kautaha ‘oku nau hu atu ki tu’apule’anga e ngaahi me’amo’ui (1)(i.e. vasuva, feo, moe ngaahi alame’a pehe).
- Fakafofonga mei he ngaahi Potungaue ‘oku ‘ikai fakapule’anga (1), ka ‘oku nau kaungatonu ki hono muimui’i ‘ae malu e mo’ui ngaahi me’a mo’ui.
- Tokotaha taukei mei tu’a (1) (‘okapau ‘oku fiema’u)

Koe Kulupu Ngaue fakafonua ki he hao ‘a e me’a mo’ui ‘o ‘oseni tenau fatongia’aki hono muimui’i ofi e fakahoko ‘o e palani pea pehe ki hono toutou vaka’i hono ola. Fakakau atu kiai hano fokotu’u ha Komiti si’i ki hono fakahoko ‘oe palani ka ‘e ‘i he malumalu pe ‘o e Kulupu Ngaue fakafonua ki he hao ‘a e me’a mo’ui ‘o ‘oseni . Koe Komiti si’i ni ‘e ‘e kau kiai ha ‘ofisa toutai ‘e ua (2), tokoua kena fakafofonga’i e kau faama pea moe tokotaha tene fakafofonga’i mai e ngaahi kautaha ‘oku nau uta atu ki tu’apule’anga ‘ae ngaahi me’a mo’ui, pea ko kinautolu ia e fakafatongia’aki hono fakahoko e palani lolotonga e ta’u ‘e nima (5). Koe Komiti ko ‘eni kuopau kenau fakataha fakamahina 3-4 ‘o siofi e ngaue ne lava he fakahoko ‘i he palani ‘i he mahina ‘e 3-4 ki mu’a pea fokotu’utu’u leva e ngaahi ngaue ke fakahoko he ngaahi mahina ka hoko. Koe komiti foki koeni koe komit fakahoko ngaue ia ‘o e palani, pea tenau tokanga ki hono fokotu’utu’u ha ako makehe, fakatau mai ha ngaahi me’a ngaue mo fakahoko ha ngaahi fakatotolo kapau e fiema’u.