Tuvalu: Pacific Islands Regional Oceanscape Program – Second Phase for Economic Resilience (PROPER) Project

P179599

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

Tuvalu Fisheries Department
as Implementing Agency

Prepared for the Government of Tuvalu by the Tuvalu Fisheries Department (TFD) together with the Central Project Management Office (CPMO) from the Ministry of Finance (MOF)

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Executive Summary

The Government of Tuvalu has requested support from the World Bank (WB) for the Tuvalu: Pacific Islands Regional Oceanscape Program - Second Phase for Economic Resilience (TV PROPER) Project ('the Project') following successful completion of the WB-funded Tuvalu Pacific Regional Oceanscape Program (TV PROP) Project.

As part of project financing, the Project is required to comply with the requirements outlined in WB's Environmental and Social (E&S) Framework and ten Environmental and Social Standards. The purpose of this Environmental and Social Management Plan (ESMP) is to provide a system for managing the E&S risks and impacts associated with the Project in alignment with the WB requirements and relevant Tuvalu national regulations. The ESMP provides information and guidance on the following:

- Project activities
- Applicable Tuvalu regulations and World Bank standards/guidelines
- Environmental and social context
- Environment and social risks, potential impacts and mitigation
- Risk management processes
- Incident management
- Implementation responsibilities, resources and capacity building
- Detailed procedures and templates to support the implementation of the ESMP (provided as appendices).

The ESMP is one of several instruments developed to manage the E&S aspects of the Project and is supported by a Stakeholder Engagement Plan, Labour Management Procedure and an Environmental and Social Commitment Plan.

The Project is part of a multi-phased approach to regional programs across the Pacific designed to strengthen the shared management of selected Pacific Island oceanic and coastal fisheries, and the critical habitats upon which they depend. The Project Development Objective is to strengthen regional collaboration and national capacity for the management and the sustainable development of the oceanic and coastal fisheries sector in Tuvalu.

The Ministry of Finance (MOF) will serve as the Executing Agency and the Project will be implemented by the Tuvalu Fisheries Department (TFD). The Project is expected to commence in 2023, and to run for a period of 6 years.

Project activities will include support for upgrade of an existing aquaculture facility; construction of a watch tower; implementation of a small scheme to undertake coral rehabilitation projects; procurement of equipment and technology (e.g., upgrading communications infrastructure, procuring safety equipment; procuring a fishing research vessel); fisheries surveys and trials; feasibility and other studies; technical advisory (including support for legislative and policy change); and training activities.

The Project is being implemented to strengthen regional collaboration and national capacity for the management and the sustainable development of the oceanic and coastal fisheries sector in Tuvalu, which is thus expected to result in long-term positive environment and social impacts. Despite this, there are potential environmental and social risks associated with the project. The key risks, potential impacts and mitigations identified are:

- generation of electronic/solid waste to be managed by sending all solid waste to Funafuti that cannot be reused, refurbished, or recycled, will be sent to an authorized overseas facility due to limitations with landfills in Tuvalu.
- occupational health and safety (OHS) risks to be managed through the preparation and implementation of contractor OHS procedures, and implementation of existing TFD procedures.
- feasibility and other studies not including appropriate consultation leading to study findings missing key information which is to be mitigated through requiring the terms of reference for each scope of work to include consultation component.
- potential for downstream (i.e., future) environmental and social risks and impacts associated with technical assistance for legislative and policy change to be assessed during project implementation and this included in the TOR for the scope of work.
- potential for Gender Based Violence, Sexual Exploitation, Abuse, Harassment and Violence against Children to be mitigated and managed through mandatory Code of Conduct for workers, awareness training and the Grievance Redress Mechanism.
- upgrade to existing aquaculture facilities may results in various environment and social impacts depending on the type of support provided – this will be assessed, and specific mitigations developed during project implementation with a technical expert consultant undertaking an E&S assessment of the proposed upgrades in alignment with the EHS Guidelines for Aquaculture.
- the coral rehabilitation projects have potential to impact reefs where coral is harvested may result in damage to donor coral – to balance the potential negative impacts and enhance the potential positive impacts, the coral rehabilitation subprojects that have the highest likelihood of success will undertaken.
- construction of a watchtower may result in typical construction-related impacts, such as erosion the runoff of suspended solids; pollution and spills resulting from construction activities; need for solid waste management; noise and dust during construction, etc., and this will be assessed, and specific mitigations developed during project implementation through the preparation of a ESMP that will require a “no objection” from the WB to proceed. Additional site-specific risk/impacts may also be applicable depending on the final site chosen for the watchtower.

The implementation of the ESMP will be the responsibility of the Project Coordinator from the Project Management Unit (PMU) that has been established within TFD specifically for the Project. An E&S Officer will be staffed under the PMU to support the Project Coordinator. The Tuvalu Ministry of Finance’s Central Project Management Office (CPMO) team (which comprises an International E&S Risks Advisor and a Local E&S Safeguards Specialist) will also assist the PMU team as required. The WB E&S team will provide regular E&S risk management compliance monitoring and support for the project. Contractor(s) will be required to comply with the Project’s E&S risk management plans and procedures, including this ESMP and the LMP, as well as local legislation, and this will be specified in the contractor’s agreements.

Acronyms and Abbreviations

ADB	Asian Development Bank
C-ESMP	Construction-ESMP
CA	Competent Authority
CBPD	community-based planning and development
CPMO	Central Project Management Office
DoE	Department of Environment
E&S	Environmental and Social
EEZ	Exclusive Economic Zone
EHS	environment, health and safety
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standard
FAD	Fishing Aggregating Device
FCA	Funafuti Conservation Area
FRFSP	Funafuti Reef Fisheries Stewardship Plan
GBV	Gender-based Violence
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIIP	Good International Industry Practice
GRM	Grievance Redress Mechanism
IDA	International Development Association
JHA	Job Hazard Analysis
LMMA	Locally-Managed Marine Areas
LMP	Labour Management Procedure
MCS	monitoring, control and surveillance
MFAT	New Zealand Ministry of Foreign Affairs and Trade
MOF	Ministry of Finance
NGO	non-government organisation
OHS	occupational health and safety
PICs	Pacific Island Countries
PIFS	Pacific Islands Forum Secretariat
PMU	Project Management Unit
PNAO	Parties the Nauru Agreement Office
SEA/SH	Sexual Exploitation and Abuse / Sexual Harassment
SEAP	Stakeholder Engagement Action Plans

SEP	Stakeholder Engagement Plan
SOP	Standard Operating Procedure
SPAG	spawning aggregations
SPC	Secretariat of the Pacific Community
TA	technical assistance
TANGO	Tuvalu Association of Non-Government Organisations
TFA	Tuvalu Fisheries Authority
TFD	Tuvalu Fisheries Department
TFSP2	New Zealand Tuvalu Fisheries Support Programme Phase 2
TOR	terms of reference
TV PROPER (the Project)	Tuvalu Pacific Islands Regional Oceanscape Program - Second Phase for Economic Resilience
TV PROP	Tuvalu Pacific Islands Regional Oceanscape Program
UNDP	United Nations Development Programme
UVS	underwater visual census
UXO	unexploded ordinance
VAC	Violence Against Children
VDS	Vessel Day Scheme
VMS	vessel monitoring system
WB	World Bank
WCPFC	Western & Central Pacific Fisheries Commission
WCPO	Western and Central Pacific Ocean

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1. Introduction

The Government of Tuvalu has requested support from the World Bank (WB) for the Tuvalu: Pacific Islands Regional Oceanscape Program - Second Phase for Economic Resilience (TV PROPER) Project ('the Project') following successful completion of the WB-funded Tuvalu Pacific Regional Oceanscape Program (TV PROP) Project. Both projects are part of multi-phased approach regional programs across the Pacific designed to strengthen the shared management of selected Pacific Island oceanic and coastal fisheries, and the critical habitats upon which they depend. The specific objective of the TV PROPER Project is to strengthen regional collaboration and national capacity for the management and the sustainable development of the oceanic and coastal fisheries sector in Tuvalu.

The Ministry of Finance (MOF) will serve as the Executing Agency and the Project will be implemented by the Tuvlau Fisheries Department (TFD). The Project is expected to commence in 2023, and to run for a period of 6 years.

As part of project financing, the Project is required to comply with the requirements outlined in WB's Environmental and Social Framework (ESF) and, as such, this Environmental and Social Management Plan (ESMP) has been prepared to satisfy a project financing requirement.

The purpose of this ESMP is to provide a system for managing the environment and social (E&S) risks and impacts associated with the Project in alignment with:

- The WB ESF, including the ten Environmental and Social Standards (ESSs).
- Relevant Tuvalu national regulations.

The ESMP is one of several instruments developed to manage the E&S aspects of the Project and is supported by:

- Stakeholder Engagement Plan (SEP)
- Labour Management Procedures (LMP), including annexed Code of Conduct
- Environmental and Social Commitment Plan (ESCP).

All E&S instruments have been disclosed on the TFD website[1].

[1] https://tuvalufisheries.tv

2. Project Description

2.1. Context

The Western and Central Pacific Ocean (WCPO) region covers 11 percent of the world's ocean area and is home to 22 small island countries and territories, including Tuvalu. Pacific Island Countries (PICs) are small in size with limited natural resources, narrowly based economies, large distances from major markets, and vulnerable to external economic and environmental shocks. Fisheries underpin the revenue source of the PICs' economy and are vital for food, nutrition, and livelihoods, and all fisheries activities in the region are likely to be affected by climate change. The well-being of communities in the region depends on the productivity of fish stocks, and local, regional, and national capacities to manage them sustainably.

Tuna fisheries are a major source of revenue and foreign exchange in the WCPO, including Tuvalu, and coastal fisheries are essential for population wellbeing (e.g., food and nutrition, households' incomes and livelihood, and culture). Small-scale commercial fishing supports the livelihoods of many who are not formally employed. Large-scale commercial fishing typically targets sustainable stocks of tuna, while subsistence fishing of lagoon and reef fish is placing pressure on coastal resources, particularly around the Tuvalu's capital, Funafuti, and this is further compounded by population migration to the capital.

Coastal protection, food supply and revenues from fisheries are forecast to decline with climate change. By 2100, because of climate change, productivity is projected to reduce by 90 percent for coral dependent species, 20-40 percent for reef associated species, and up to 20 percent for targeted invertebrates.[2] Such changes are likely to have profound impacts on food security, especially in the outer islands. To ensure fish are available for future generations, regulations and management plans are required for coastal fisheries and, and fishing effort relocated onto other areas where resources are abundant.

In response to increasing demand for assistance from PICs, the World Bank completed a Fisheries Engagement Strategy for the region at the end of 2011. On this basis, in early 2012 several PICs, as well as the Pacific Islands Forum Secretariat (PIFS), began discussions with the World Bank about the possibility of a coordinated regional project to provide International Development Association (IDA) financing as well as technical assistance to support continued sustainable development of the marine fisheries. After the extensive consultations between the World Bank and the PICs, common elements emerged for a coordinated package of IDA financing and technical assistance to the PICs for the fisheries and oceans sectors, known as the Pacific Islands Regional Oceanscape Program (PROP). The TV PROP (2015 to 2022) was funded under the PROP. The Pacific Islands Regional Oceanscape Program - Second Phase for Economic Resilience (PROPER) is a continuation of the PROP and the program under which the TV PROPER is being funded.

The TV PROP was designed to strengthen national and regional institutions responsible for the management of oceanic fisheries, as well as local and national institutions responsible for the management of coastal fisheries. Key outputs achieved under the TV PROP related to oceanic and coastal fisheries (on which the TV PROPER will build) include: the continued institutional strengthening of TFD through progressing the establishment of the Tuvalu Fisheries Authority (TFA) and progress towards actualizing a fishery product food safety Competent Authority (CA); expanding the coastal resource assessments and monitoring programs to the outer islands under community-based planning and development (CBPD) with the Kaupule (or Island Councils); and further strengthening of Tuvalu's

[2] Bell J.D., Johnson J.E., Hobday A.J. 2011. Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change. SPC New Caledonia

monitoring, control and surveillance (MCS) capabilities, building on the trial and MCS arrangements review completed under TV PROP.

2.2. Project Overview

TV PROPER follows on from the TV PROP Project and will be implemented over a six-year period, from 2023 to 2029. The Project comprises four components:

- Component 1: Strengthening Policy and Institutions
- Component 2: Strengthening Regional Collaboration and National Capacity for Oceanic Fisheries
- Component 3: Strengthening Regional Collaboration and National Capacity for Coastal Fisheries
- Component 4: Project Management

The development objective for the proposed Project is to strengthen regional collaboration and national capacity for the management and the sustainable development of the oceanic and coastal fisheries sector in Tuvalu. Achievement of the development objective will be monitored through the tracking of the following indicators:

- Fisheries management informed by timely access to data by national and regional stakeholders:
    - Observer reports submitted electronically
    - Tuvalu flagged tuna purse seiners timely reporting to the Western & Central Pacific Fisheries Commission (WCPFC).
    - Domestic small-scale vessels reporting to the Tuvalu Fisheries MCS Center
    - Islands with annual estimates of total catch of tuna and reef fish
- Indicator species with reversal of an overfished status for target areas
- Stakeholders satisfied with the project-financed climate-resilience infrastructure
- Fish from experimental fishing provided to the local market

Beneficiaries of the Project are primarily expected to be the TFD staff that will directly benefit from improved capacities and working conditions, as well as Tuvaluans dependent on the country's fisheries, including fishers, people who work in the wider fishing industry and their households. National and Kaupule level institutions including outer islands engaged in fisheries management, including communities' associations and government entities, will benefit from improved capacity to undertake resources assessments, formulate and analyze policy and implement management measures. Ultimately, the general population of the Tuvalu will benefit from a healthier marine environment and increased food security. Women will benefit from activities through the protection and management of coastal resources and facilitation of access to livelihood and development programs, as well as climate change adaptation programs.

2.3. Project Components

The Project's components are described in the following sections.

2.3.1. Component 1: Strengthening Policy and Institutions

Component 1 (Strengthening Policy and Institutions) will provide institutional support to the national fisheries program in Tuvalu for better regional, national, and sub-national, as well as cross sectoral,

coordination, management, and development of fisheries. This will be achieved through the following subcomponents.

Subcomponent 1.1 Strengthening of TFD into Tuvalu Fisheries Authority (TFA)

Activities supported under this subcomponent include:

- 1.1a) Establishment of a TFA through short-term technical assistance to develop the legislative framework and the subsequent establishment of the Board of Directors and the associated corporate structure requirements.
- 1.1b) Review of the fisheries legislation
- 1.1c) Strengthening human resources in TFD through training and workshop participation, as well as professional and workforce development scheme support.
- 1.1d) Upgrading TFD IT infrastructure and communications to facilitate TFD involvement in virtual settings.

Subcomponent 1.2 Meeting Tuvalu's Flag and Port State Responsibilities

Activities supported under this subcomponent include:

- 1.2a) Developing a National Fleet Management Policy through the establishment of policies, rules and standard operating procedures to ensure that Tuvalu-flagged fishing vessels comply with national and international fishery management arrangements.
- 1.2b) Short term technical assistance for helping drafting regulations and other supporting legislation to give legal effect to the Fleet Management Policy.
- 1.2c) Short-term technical assistance for accession to the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (the Port States Management Agreement, PSMA).

Subcomponent 1.3 Strengthening seafood health monitoring

Activities supported under this subcomponent include:

- 1.3a) Developing CA inspection and control manuals, and the CA records database.
- 1.3b) Training on seafood product hygiene and financing CA staff attachments to Forum Fisheries Agency (FFA).
- 1.3c) Implementing the seafood sampling plan, with in-house capacity and sending (to be funded by the project for an estimated three-year period) samples to overseas laboratories.

2.3.2. Component 2: Strengthening Regional Collaboration and National Capacity for Oceanic Fisheries

Component 2 (Strengthening Regional Collaboration and National Capacity for Oceanic Fisheries) would comprise two subcomponents.

Sub-component 2.1 Consolidating oceanic fisheries management

The subcomponent will contribute to addressing increasing MCS obligations by:

- 2.1a) Building capacity to conduct MCS activities through training on dockside and at-sea inspections, boarding, and vessel operation and safety; preparation of the design and specifications for, and procurement of a patrol vessel; and patrols and inspections.

- 2.1b) Supporting the development of the observer program through training and equipment. This would include items such as tablet computers, satellite phone transmitters, boots, high-visibility vests and waterproof jackets.
- 2.1c) Expanding the application of new technology to support MCS, as well as the establishment and fitting out of an MCS operations centre. This will include the procurement of IT equipment, screens, HF radio, etc. An example of a MCS operation centre is provided as **Error! Reference source not found.**.

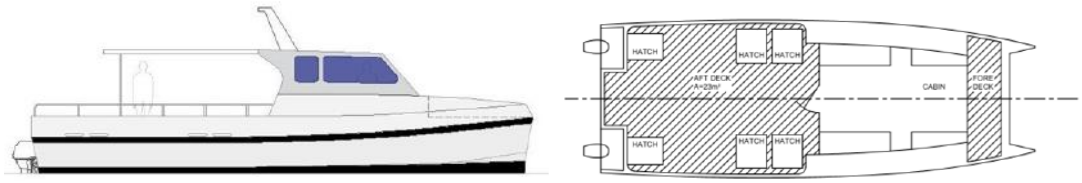
Figure 1: Example MCS operation centre

Sub-Component 2.2 Harnessing of oceanic fisheries to regional economy

This subcomponent will contribute to increasing domestic value-added, economic diversification, and employment through:

- 2.2a) The development of a local tuna fishing fleet through the procurement of an exploratory fishing vessel, as well as fishing and bait trials and training to increase direct economic benefits from tuna resources, improve food security and divert fishing pressure away from lagoons and coastal areas. The vessel originally proposed was a 12-metre catamaran (**Error! Reference s ource not found.**). This vessel type has been proposed based on study carried out by a naval architect and can accommodate tuna longline fishing, and possibly other fishing methods, on multi-day trips in nearshore waters accessible from Funafuti. Being twin-hull also means the vessel can be hauled onto the shore in cases of extreme weather or for routine maintenance. However, a larger 14.8 metre monohull vessel has also been proposed, and may be more suitable for the offshore fishing operations envisaged. A decision on the best design will be made following a feasibility study financed by the Project Preparatory Advance.

Figure 2: Fishing catamaran design

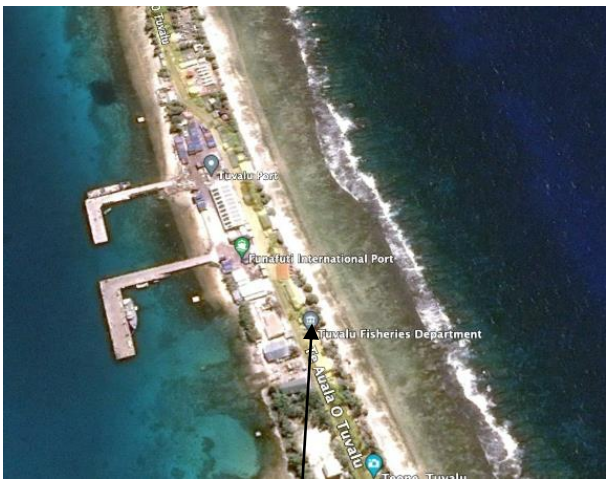


- 2.2b) Studies to assess the technical feasibility and the cost of establishing and operating permanent fishery infrastructure (e.g., boatyards, jetties, ramps) to support small fishing vessels in Funafuti, and procurement of climate resilient portable infrastructure, two floating jetties and ten roll-up ramps for Funafuti and outer islands for local fishing vessels.
- The floating jetties and roll- up ramps will provide safer and more efficient ways for local fishermen to bring their boats ashore for repairs and maintenance and to avoid storm or cyclone damage, and easily relaunch them afterwards. The ramps and jetties can also be brought ashore (after boats have been landed or during bad weather). The existing Kaupule tractor on each island would be used to move the infrastructure when needed. Examples of a roll-up ramp and floating jetty are provided in Figure 3. The location for these facilities on Funafuti has been identified (Figure 4) and are on government land (adjacent to the TFD facility) and Kaupule land (adjacent to Tausoa Lima Community Hall). The facilities on the outer islands will be on Kaupule land, although the exact locations are yet to be identified.

Figure 3: Example of a roll-up ramp (left) and floating jetty (right)

Figure 4: Proposed locations of the roll-up ramps and floating jetties at Funafuti

Adjacent to Tausoa Lima Community Hall



Adjacent to the Tuvalu Fisheries Department

- 2.2c) Improving sea safety for domestic fishing fleet as enabling condition for domestic oceanic fisheries development with the testing of and acquisition of a vessel monitoring

system (VMS) for small-scale vessels, consultant services for the development of sea safety regimes and policy, safety equipment (e.g., grab bags and VHF repeaters) and training.

'Grab bags' are pre-packaged bags containing a range of small-boat safety equipment including life jackets, flares, signalling flags, mirrors, rainwater collection vessels, first aid supplies, a Personal Locator Beacon and other items intended to support fishing vessels in distress (Figure 5). This activity will include distributing grab bags to fishers and replacing some of the aging components in the previously distributed grab bags.

Figure 5: Example grab bag

Source: https://www.spc.int/updates/blog/2018/05/emergency-grab-bags-save-lives-in-tuvalu

- 2.2d) Studies to inform marketing and post-harvest development, including a domestic market study, value-added product development advice and training, an export market study and trials,
- 2.2e) Feasibility, assessing and developing of pilot low-carbon cold chains in outer islands.

2.3.3. Component 3: Strengthening Regional Collaboration and National Capacity for Coastal Fisheries

Component 3 (Strengthening Regional Collaboration and National Capacity for Coastal Fisheries) would specifically address a selected set of activities that aim to strengthen regional collaboration and national capacity for the management and sustainable development of coastal fisheries. It will comprise of two subcomponents.

Subcomponent 3.1. Strengthening coastal fisheries monitoring and management

The subcomponent will contribute to strengthening coastal fisheries information and CBPD through:

- 3.1a) Collecting coastal fisheries data supporting adaptive fisheries management, outreach and awareness the expansion of the creel surveys, metronome trips, and ciguatera surveys
- 3.1b) Progressing fisheries monitoring and management in outer islands with financing for Outer Islands Steering Groups' establishment, data collection, and fisheries management plans design and implementation, and annual consultations with stakeholders to evaluate and effect adaptive management measures.
- 3.1c) Strengthening the MCS of coastal fisheries in Funafuti to actualize the adaptive management plans for building a watchtower, acquiring, operating and maintaining MCS

drones and coastal vessel[s] and developing by-laws and awareness material on law enforcement of the Funafuti Reef Fisheries Stewardship Plan (FRFSP).

Subcomponent 3.2 Developing research and problem-solving capacity

The subcomponent will provide funding for activities contributing to securing food security, and proactive identifying and responding to environmental threats including climate change. This would be achieved through financing which will include goods, operating cost, consulting services for:

- 3.2a) Underwater visual census (UVC) survey of the Funafuti Conservation Area (FCA).
- 3.2b) Build coral nurseries to support rehabilitation of critical degraded wild habitats restoration, including coral planting.
- 3.2c) Aquaculture support to outer islands through technical assistance for milkfish farming, including an upgrade to the farming area on Vaitupu. This would consist of:
    - Providing assistance to the existing milk-fish farm at Vaitupu. This would involve an international TA expert on small-scale extensive pond and cage farming of milkfish to visit the farm and assess strengths and weaknesses of the current operation, and provide advice on improvements. Emphasis will also be costs of the operations, equipment needs, staff and training needs, markets for the fish and likely economic benefits to the Vaitupu community. The assessment will also include environmental aspects. Based on the findings of the assessment, equipment and other activities will be funded by the Project. This could include items such as a pellet machine or additional sea cages.
    - Assessing the viability of new milk-fish farms. The international technical assistance (TA) expert visiting candidate islands, such as Nukulaelae, Nukufetau, Nui and Nanumaga to determine whether milk-fish farms, similar to the Vaitupu operation, could be established there. The project will not fund the establishment of new milk-fish farms.
- 3.2d) Promoting giant clam production for the existing Funafuti Hatchery, in collaboration with the New Zealand Tuvalu Fisheries Support Programme Phase 2 (TFSP2).
- 3.2e) Support to the Fisheries Laboratory to ensure that officers are able to respond to and investigate fisheries issues. This involves supplying laboratory items (e.g., microscopes), consumables (such as reagents, test kits) and providing funding for regular factory maintenance and repairs of equipment.
- 3.2f) Undertaking fish biology research for management, including research on spawning aggregations (SPAG) and size at maturity. This will include survey work (field investigations and consultation) on all islands.

2.3.4. Component 4: Project management

Component 4 (Project Management) will include technical and operational assistance works, goods, services, workshops, and operational costs to support day-to-day management and implementation of the project, and reimbursing project preparation. This will include procurement, financial management, environmental and social instruments, and preparation of annual work plans and organization of audit reports; coordination between regional and national activities. It will provide institutional support and capacity development for project management, coordination,

implementation, and monitoring and evaluation system to report on the project's expected results and systematize the project's lessons learned.

3. Legislative, Regulatory and Policy Framework

3.1. Tuvalu

This section provides an overview of Tuvalu's legislation, regulations and policies that are relevant to the Project.

3.1.1. Marine Resources Act 2006

Marine Resources Act is the main legislation pertaining to fisheries and aquaculture. The objective of the Act is to ensure the long-term conservation and sustainable use of the living marine resources for the benefit of the people of Tuvalu. The Act gives the Minister responsible for fisheries the authority for the conservation, management, development and sustainable use of the living marine resources in the Exclusive Economic Zone (EEZ) of Tuvalu. The Act includes:[3]

- principles and measures in the conservation, management, and development of fisheries that the Minister must take into account
- provision for the Minister to declare that a fishery important to the national interest is a "designated fishery"
- requirement for the Fisheries Officer to prepare a management plan for each designated fishery, with specifications for each fisheries management plan provided
- requirement for all vessels engaged in fishing to have a valid/applicable permit or a valid/ applicable license under a multilateral access agreement in accordance with the Act.

Regulations promulgated under the Act include:

- **Fisheries (VMS) Regulations (2000)** – this regulation stipulates the use of automatic location coordinators by commercial fishing vessels operating in Tuvalu waters.
- **Conservation and Management Measures (PNA 3IA) Regulations (2009)** – this regulation contains provisions for the implementation of a number of measures agreed by PNA and the Vessel Monitoring System Regulation.
- **Fishing Crew Regulations 2020** – this regulation is to ensure that qualified crews have access to regulated fishing crew agencies; and to prescribe working conditions for qualified crew on fishing vessels to which these regulations are applicable (i.e., foreign vessel licenced to operate in Tuvlau waters and Tuvlau vessels).
- **Food Safety (Fishery Products) Regulations 2022**[4] – this regulation establishes the specific food safety conditions required for production and distribution of fisheries products to export markets.

3.1.2. Maritime Zones Act 2012

The Maritime Zones Act provides the framework for establishing maritime zones in Tuvalu. The following zones[5] have been declared under the Act: Archipelagic Baselines 2012 (resulting in an

[3] https://tuvalufisheries.tv/2015/07/06/fisheries-legislation-in-tuvalu/
[4] This regulation was made under the Marine Resources Act 2006 and the Food Safety Act 2007
[5] https://tuvalufisheries.tv/2015/07/06/fisheries-legislation-in-tuvalu/

archipelago comprising Nukufetau, Funafuti and Nukulaelae); Territorial Sea Baselines 2012; Outer Limits of the Territorial Sea 2012; Outer Limits of the Exclusive Economic Zone 2012; and Declaration of the Outer Limits of the Continental Shelf 2012.

3.1.3. Environmental Protection Act 2008

The Environmental Protection Act 2008 is the main legislation pertaining to the protection and management of the environment. It covers the following topics:

- powers of enforcement
- national environment forum and council and island environment committees
- environmental impact assessment
- pollution control and waste management
- hazardous wastes and substances
- international and regional environmental obligations
- response to climate change
- protection of biodiversity.

The Environmental Protection (Environmental Impact Assessment) Regulations 2012 and Environmental Protection (Environmental Impact Assessment) Amendment Regulations 2018 provide details of the development approvals process and procedures for undertaking environment impact assessment, which are administered by the Department of Environment (DoE). Schedule 1 of the Regulation lists the 'development activities' to which the regulations may be applied. Those that may be relevant to the Project are provided in Table 1. It is understood from the TFD that due to the very low level of aquaculture development in Tuvalu, this process has not yet been applied to the aquaculture industry.

Table 1: Potentially applicable Schedule 1 'Development Activities'

Industry	Development Activity
5. Fishing and Marine	(a) fish processing (including sessile marine animals)
	(c) land or marine foods processing or farming
	(e) fishing ponds industries
	(f) commercial fishing activities in Tuvalu sea waters
8. Agricultural and Land	(f) the removal of trees (including mangroves) or natural vegetation of any area in excess of one-third of a hectare
9. Public Works Sector	(o) marinas (comprising pontoons, jetties, piers, dry storage, moorings) for more than 5 vessels

Source: Schedule 1 of Environmental Protection (Environmental Impact Assessment) Regulations 2012

Where a proposed activity meets the definition of a Development Activity, a Notification and Application for Development Approval must be lodged, and the the environmental impact assessment process must be followed (Table 2). The regulations also provide details on the content requirements of the two different levels of environmental impact assessment.

Table 2: Process for environmental impact assessment

Step	Detail

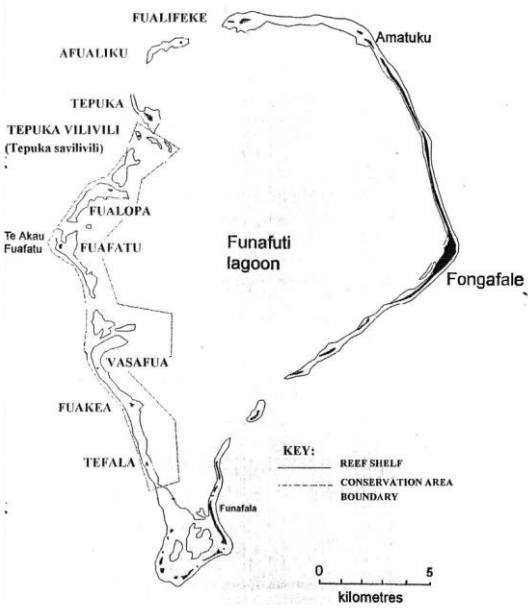
Notification	Notification of the proposed development activity by the proponent to the Department through completing and lodging the Notification and Application for Development Approval as required under sub-regulation 6(1)(a).
Screening	Screening by the Department in accordance with regulation 6B, specifically the Department must screen any development proposal registered using the EIA Screening Checklist, issued by the Department, to identify potential environmental and social safeguard risks and impacts so as to determine which category to assess the proposed development activity under: • Category A – development activities that will result in broad, diverse and potentially irreversible adverse impacts, major resettlement, conversion of natural habitats and involves the use of hazardous materials. • Category B – development activities that are geographically limited with readily identified adverse impacts that can be mitigated. • Category C – development activities with negligible or minimal potential adverse impacts are easily mitigated and are exempted under regulation 5. The screening must also determine the type of report required to be prepared for each category of development such as: • full environmental impact assessment for category A • preliminary assessment report for category B
Scoping	Scoping by the Department in accordance with regulation 6C, specifically the Department must undertake a scoping exercise where the screening process assesses a development activity either as a Category A or B. In carrying out a scoping exercise, the Department must: • identify the significant environmental and social impacts that the proposed development may cause and identify which of those impacts are likely to be extreme and therefore require detailed investigation; • consult with the people who may be affected by the proposed development, either directly or indirectly; and • consult with the people who may have special knowledge of the proposed development. The information collected under sub-regulation (2) shall inform the Terms of Reference which the proponent must develop in accordance with the EIA guidelines issued by the Department. The scoping process must be completed within ten (10) working days.
Submission	Submission of the development approval application by the proponent in accordance with sub-regulation 6D.
Review	Review of the development approval application either by the Department or an external agency or consultant in accordance with regulation 14A or regulation 15.
Public Consultations	Public consultations by the proponent as determined by the Minister under regulation 16.
Referral	Referral of a full assessment by the Department to the Environmental Impact Assessment Task Force for consideration and recommendation in accordance with regulation 18.
Decision	Decision making by the Minister based on the recommendation of the Environmental Impact Assessment Task Force.
Monitoring and Enforcement	Monitoring of the development by the Department in accordance with regulations 14 and 23; and enforcement by the Department of any conditions imposed with a development consent in accordance with regulation 23.

Source: Adapted from Environmental Protection (Environmental Impact Assessment) Amendment Regulations 2018

3.1.4. Conservation Areas Act 2008

The Conservation Areas Act 2008 is the main legislation pertaining to conversation areas. The objective of the Act is to make provisions for the declaration and management of conservation areas. Under the Act, the Funafuti Conservation Area Order was made declaring the Funafuti Conservation Area (FCA) which covers the western portion of the lagoon and is shown on Figure 6.

Figure 6: Funafuti Conservation Area



Source: Schedule 2 of Funafuti Conservation Area Order

3.1.5. Falekaupule (Local Government) Act 1977

Tuvalu has a unique legal environment for coastal fisheries management and the law recognizes the role of traditional decision-making and localized governance. Management responsibilities are devolved to a large extent, to the Kaupule (or Island Councils) of each island under the Falekaupule Act. This requires the Kaupule to 'provide for the improvement and control of fishing and related industries in accordance with the Fisheries Act'. An example is the preparation of the Funafuti Reef Fisheries Stewardship Plan (FRFSP) through the Funafuti Conservation Area order that is based on a 'whole-Atoll approach', recognizing the role of people and healthy ecosystems. As such, the TFD works closely with Kaupule on coastal fisheries management and development.

3.1.6. Tuvalu National Strategy for Sustainable Development 2021-2030

Strengthening the management and development of Tuvalu's fisheries resources is a priority for the Government, as reflected in Te Kete[6] (Tuvalu National Strategy for Sustainable Development 2021-2030). In particular, outcome 7 calls for broader economic benefits and increased food security from fisheries, including:

- improved small-scale fisheries operations for incomes
- food security and healthier diets
- optimised revenue generation from ocean fisheries.

[6] https://www.gov.tv/national-strategy-for-sustainable-development-plan/

Key strategic actions proposed in Te Kete to achieve these outcomes are:

- Developing a sustainable commercial fishery optimizing revenue from Tuvalu's waters
- Fostering sustainable management of oceanic fisheries resources
- Improving management of coastal fisheries to ensure inshore resource sustainability
- Consistent data collection and analysis to ensure best decision-making
- Increasing the value of fishery access in Tuvalu waters.

3.1.7. Tuvalu Fisheries Department Corporate Plan 2023-2025

The TFD Corporate Plan 2023-2025[7] is based closely on outcome 7 of the Te Kete. The TDF Corporate Plan outlines the work of the TFD under seven objectives, which aligned with the Te Kete:

- develop a sustainable commercial fishery optimizing returns from Tuvalu waters
- foster sustainable management of oceanic fisheries resources
- improved management of coastal fisheries for sustainable inshore resources
- execute a consistent data collection and analysis facility to ensure best decisions are made throughout
- increase value of access fishing licenses in Tuvalu waters
- develop systems, staff capacity and facilities for a TFA
- promote public awareness and education on fisheries issues, with an emphasis on attracting talented young people into the fisheries sector.

3.1.8. Other

Other acts that may be relevant to the Project are summarised as follows:

- **Labour and Employment Relations Act 2017** – This Act provides details of the requirements for employment, including contracts, renumeration, records, maximum working hours and required rest periods, leave requirements, termination protocols, minimum age for employment, prohibition of forced labour, equal employment opportunities, etc. Further details of this Act are provided in the LMP.

- **Waste Management Act 2017** – This Act specifies the roles and responsibilities for waste management in Tuvalu and makes provision for all matters connected with the regulation and management of wastes and the provision of waste related services.

- **Harbours Act 2008** – This Act relates to pilots, harbours and shipping, and includes requirements for the erection of wharves, wharves, quays, piers, jetties, slips, etc.

- **Foreshore and Land Reclamation Act 2008** – This Act declares of the ownership of the foreshore and regulates certain reclamation projects, with "reclamation" including the construction of causeways, bridges, viaducts, piers, docks, quays, wharves, embankments, sea-walls, landing-places and other structures. The Act includes requirement for public disclosure of proposed reclamation-related Projects.

- **Native Lands Act 2008** – This Act relates to native land and registration of title. It is supported by the Tuvlau Lands Code and various regulations.

- **Crown Acquisition of Lands Act 2008** – This Act regulates the acquisition of land by the crown for public purpose.

[7] https://tuvalufisheries.tv/wp-content/uploads/2023/01/TFD-Corporate-Plan-2023-25-FINAL1.pdf

3.1.9. International Environmental Agreements

Tuvalu is a signatory to the following regional and international agreements that may be relevant to the Project:

- Maritime Labour Convention
- Convention on Biological Diversity
- Waigani Convention on hazardous and radioactive wastes
- Nauru Agreement Concerning Cooperation on the Management of Fisheries of Common Interest
- South Pacific Regional Trade & Economic Cooperation
- South Pacific Forum Fisheries Agency Convention
- Treaty on Fisheries between the Government of Certain Pacific Island States and the Government of the United States of America
- Wellington Convention on long drift nets in the South Pacific
- Niue Treaty on Cooperation in Fisheries Surveillance & Law Enforcement in the South Pacific Region
- Palau Agreement for Management of the Western Pacific Purse Seine Fishery
- Convention on the Conservation & Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean
- South Pacific Forum
- United Nations Framework Convention on Climate Change

3.2. World Bank Group

3.2.1. Environmental and Social Framework

The WB ESF sets out the 'World Bank's commitment to sustainable development, through a Bank Policy and a set of ESSs that are designed to support Borrowers' projects, with the aim of ending extreme poverty and promoting shared prosperity'. The framework become effective on 1 October, 2018 and applies to all Investment Project Financing initiated after this date. The framework consists of three parts:

1) A Vision for Sustainable Development - the Bank's aspirations regarding environmental and social sustainability.

2) The World Bank Environmental and Social Policy for Investment Project Financing - requirements that apply to the Bank.

3) The ESS requirements that apply to the Borrower and projects. The ESS are comprised of ten standards covering various topics:

    - ESS1 Assessment and Management of Environmental and Social Risks and Impacts
    - ESS2 Labor and Working Conditions
    - ESS3 Resource Efficiency and Pollution Prevention and Management
    - ESS4 Community Health and Safety
    - ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
    - ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources
    - ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities
    - ESS8 Cultural Heritage
    - ESS9 Financial Intermediaries
    - ESS10 Stakeholder Engagement and Information Disclosure

3.2.2. Environment and Social Risk Classification

As part of the Bank's requirements for project financing (as per the Environmental and Social Policy for Investment Project Financing) projects must be assessed and classified according to their level of environment and social risk. The classifications are: High Risk, Substantial Risk, Moderate Risk and Low Risk. This classification considers:

- Type, location, sensitivity, and scale of the project.
- The nature and magnitude of the potential environmental and social risks and impacts.
- The capacity and commitment of the Borrower to manage the environmental and social risks and impacts.

The risk ratings for the Project are assessed as Moderate for both environmental and social risks.

3.2.3. Applicable Environmental and Social Standards

Screening of the ESS that apply to the Project was undertaken as part of the Environmental and Social Review Summary Concept Stage. Six of the ten ESS are relevant, namely:

- ESS1 Assessment and Management of Environmental and Social Risks and Impacts: This standard sets out the Borrower's responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing, in order to achieve environmental and social outcomes consistent with the ESSs.
- ESS2 Labor and Working Conditions: This standard recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Borrowers can promote sound worker-management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions.
- ESS3 Resource Efficiency and Pollution Prevention and Management: This standard recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services and the environment at the local, regional, and global levels.
- ESS4 Community Health and Safety: This standard recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts.
- ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources: This standard recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Biodiversity is defined as the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems.
- ESS10 Stakeholder Engagement and Information Disclosure: This standard recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation.

Although ESS8 (Cultural Heritage) was not deemed relevant to the Project due to Project activities being unlikely to affect cultural heritage, Chance Find Procedures have been included in the ESMP (Appendix 2) to address unknown archeological or historical remains and objects, including graveyards and/or individual graves.

The rationale for the ESS5 (Land Acquisition, Restrictions on Land Use and Involuntary Resettlement) not being deemed relevant to the Project, despite one of the Project components pontentially resulting in the loss of access to natural resources that support subsistence and customary livelihoods, is detailed in Section 5.1.2 and Appendix 4.

3.2.4. Environmental, Health and Safety Guidelines

The Project will utilise the WB Group's Environmental, Health, and Safety (EHS) Guidelines[8]. The EHS Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). It contains the performance levels and measures that are normally acceptable to the WB Group and are generally considered to be achievable in new facilities at reasonable costs by existing technology. The EHS Guidelines are comprised of General Guidelines which are organised by themes (environmental; occupational health and safety; community health and safety; construction and decommissioning) and industry-specific guidelines that cover over 60 specific industries relating to agribusiness and food production; chemicals; forestry; general manufacturing; infrastructure; mining; oil and gas; and power.

The following EHS guidelines are relevant to the project:

- General EHS Guidelines: Environmental (including management air quality, water quality, noise, waste and hazardous materials)
- General EHS Guidelines: Occupational Health and Safety
- General EHS Guidelines: Community Health and Safety
- General EHS Guidelines: Construction and Decommissioning
- EHS Guidelines for Aquaculture.

[8] https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines

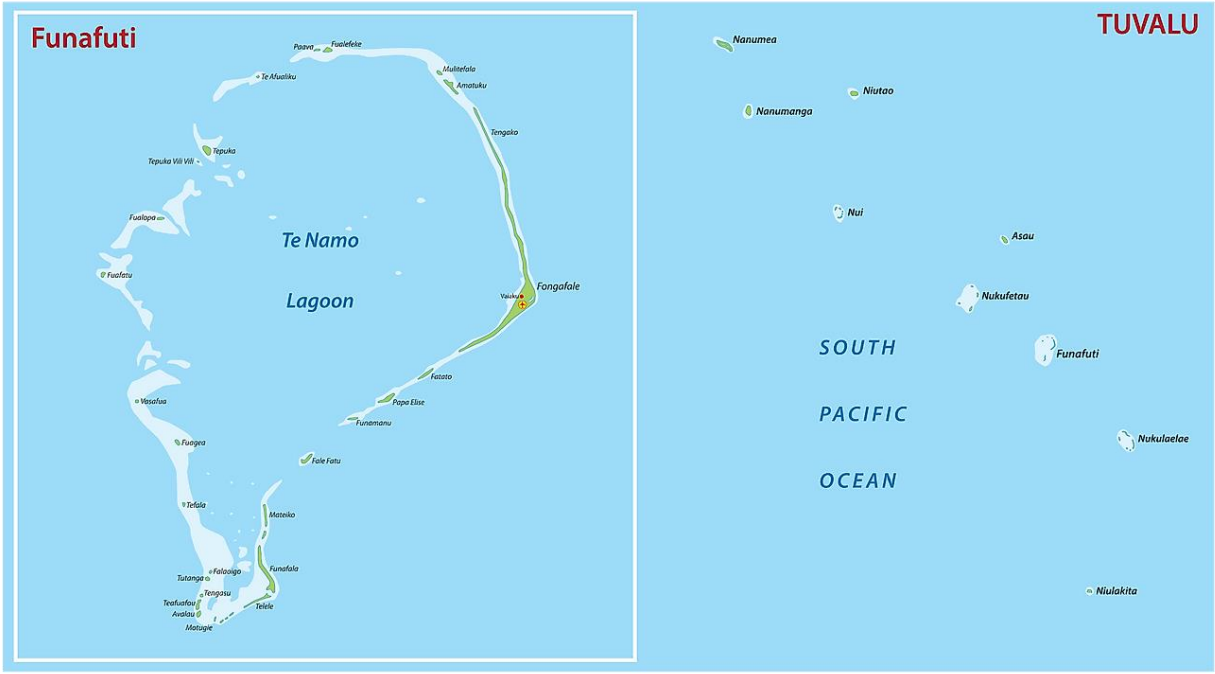
4. Country Context

4.1. Introduction

Tuvalu is a microstate of the Polynesian sub-region of the southern Pacific Ocean. Nearby countries include the Solomon Islands (to the west), Fiji and Vanuatu (to the south), Samoa and Tokalou (to the east) and Kiribati (to the north and east). Tuvalu is a volcanic archipelago and consists of three reef islands (Nanumanga, Niutao, Niulakita) and six atolls (Funafuti, Nanumea, Nui, Nukufetau, Nukulaelae and Vaitupu). The total land area of Tuvalu is 26 km² and the country has an EEZ of about 750,000 km² making it the 38th largest EEZ in the world. The population of Tuvalu was estimated at around 11,200 in 2021[9], with over half of the population residing in the nation's capital, Funafuti.

A map of Tuvalu (and insert showing detail of Funafuti) is provided as Figure 7.

Figure 7: Map of Tuvalu



Source: https://www.worldatlas.com/maps/tuvalu

4.2. Economy

Tuvalu is an upper middle-income country with a Gross Domestic Product (GDP) of US$5,632 per capita in 2021[10]. Fishing and fishing licenses provided 53.9 percent of national revenue from 2015 to 2018. Fishing license fees were estimated at US$19 million in 2018, having risen sharply from 2010 with the introduction of the Vessel Day Scheme (VDS). Except for fisheries, the country has limited resources, with tourism and a small copra industry contributing to the GDP.

[9] https://data.worldbank.org/indicator/SP.POP.TOTL?locations=TV
[10] https://data.worldbank.org/country/TV

The poverty headcount was estimated at 26.3 percent in 2010, when a Household Expenditure and Income Survey was last conducted, though extreme poverty is relatively uncommon. Poverty in Tuvalu is concentrated in the outer islands and is exacerbated by lack of access to services and employment coupled with vulnerability to shocks. Because of the Government's swift precautionary actions immediately after the COVID-19 pandemic hit, Tuvalu is one of the few Pacific nations that did not experience a decline in economic returns and contracted domestic activity and productivity, with GDP growth remaining positive throughout the pandemic. The GDP grew by 3.0% in 2021[11].

4.3. Fisheries

Marine resources are one of Tuvalu's most precious natural resources. Over half of all of households participate in fishing for subsistence (personal consumption, gifting and sale) and the consumption of fish per capita in Tuvalu is among the highest in the world at 90 kgs in the outer islands and 55 kgs for Funafuti.

The types of fishing activities can be broadly categorized as oceanic (predominantly tuna fishing), coastal and aquaculture. The Annual Report 2021[12] prepared by the TFD and Ministry of Fisheries and Trade provides the following information about the fisheries in Tuvalu:

Oceanic fisheries:

- The domestic fishery comprised of seven Tuvaluan flagged vessels in 2021 (which fish inside multiple EZZs and the high seas), with a total catch of approximately 30,000 mega tonnes (mt).
- There are two industrial fisheries - purse seine and longline, both targeting tuna with skipjack tuna comprising most of the catch for purse seine. Longline, which takes a much smaller tonnage of fish, targets yellowfin, bigeye and albacore tunas.
- Industrial fishing is generally undertaken by foreign flagged vessels operating under access agreements. The catch within the Tuvaluan EZZ in 2011 was approximately 61,000 mt for purse seine fishery and approximately 72 mt for the longline fishery.
- Fisheries licensing is a major source of Government revenue, which comes in the form of license fees, selling of vessel days, transhipment fees, observer fees and joint venture dividends.
- Industrial fishing provides employment opportunities for observers, port monitors and stevedores.

Coastal fisheries:

- There are 11 Locally-Managed Marine Areas (LMMAs) governed by customary laws to protect coastal fish stock. In addition, Funafuti has a MPA (see section 3.1.4). The TFD monitor the effectiveness of the LMMAs (and awareness programs undertaken) through socio-economic household surveys and baseline LMMA surveys. Conserving and managing marine resources through LMMAs and MPAs was noted as having a lot of community support.

[11] https://data.worldbank.org/country/TV
[12] https://tuvalufisheries.tv/sdm_downloads/annual-report-2021/

- Creel surveys undertaken in 2021 revealed that:
    - 52% of fishes landed were undersized[13]
    - of the top 15 species landed, only 4 were comprised entirely of mature catch (*Aphareus furca, Naso hexacanthus, Caranx ignobilis,* and *Sargocentron spiniferum*)
    - of the tops 15 species landed, 3 were consistently undersized *(Naso lituratus, Naso brevirostris,* and *Acanthurus triostegus*), indicating that these species require management to ensure harvest at sustainable levels
- Ciguatera poisoning[14] is a risk associated with consuming fish caught in coastal areas, with such cases averaging approximately 9 per year in Tuvalu between 2017 and 2021. Ciguatera sampling is undertaken each quarter and involves collecting samples of seaweeds that might contain the ciguatoxic-causing organism and is warn the public of the likelihood of outbreaks.
- Aluminium boats and wooden canoes are the most popular vessels used for coastal fishing. Aluminium canoes, wooden boats and fibreglass boats are also used.
- A total of 23 Fishing Aggregating Devices (FADs) were deployed around the islands in 2013 to attract pelagic fish and improve the catch rates. Most of the FADS have been lost, with only 3 remaining in 2021 (around Nanumaga, Funafuti and Nukulaelae).

Aquaculture:

- There is a small aquaculture industry in Tuvalu.
- Aquaculture facilities include a milk-fish farm on Vaitupu.
- The Funafuti Hatchery is currently under construction with the build and fit-out with equipment being funded under the TFSP2.

4.4. Natural Hazards and Climate Change

Tuvalu is recognized internationally as one of the most climate-vulnerable states on earth with an average height above sea-level of less than 3 meters. Tuvalu faces a risk of cyclones during the wet season (October – March), and the low-lying islands are susceptible to coastal floods and tsunamis. During the dry season (June – September) an increasing number of droughts are experienced.

Tuvalu relies on rainwater for freshwater as the groundwater is no longer potable due to saltwater intrusion caused by rising sea levels[15]. The salination of groundwater has also affected crop production. Rising sea levels combined with extreme weather events is contributing to the inundation of low-lying areas and causing coastal erosion.

[13] had not reached the size where they are able to breed at least once

[14] Ciguatera poisoning is a form of food poisoning. It is caused by eating warm water finfish that carry ciguatera poison (toxin). Small plant-eating fish eat toxic algae and in turn are eaten by larger, predatory fish, like Spanish Mackerel. Source: https://www.foodauthority.nsw.gov.au/consumer/food-poisoning/fish-ciguatera-poisoning#:~:text=Ciguatera%20poisoning%20is%20a%20form,predatory%20fish%2C%20like%20Spanish%20Mackerel.

[15] https://www.adaptation-undp.org/explore/polynesia/tuvalu

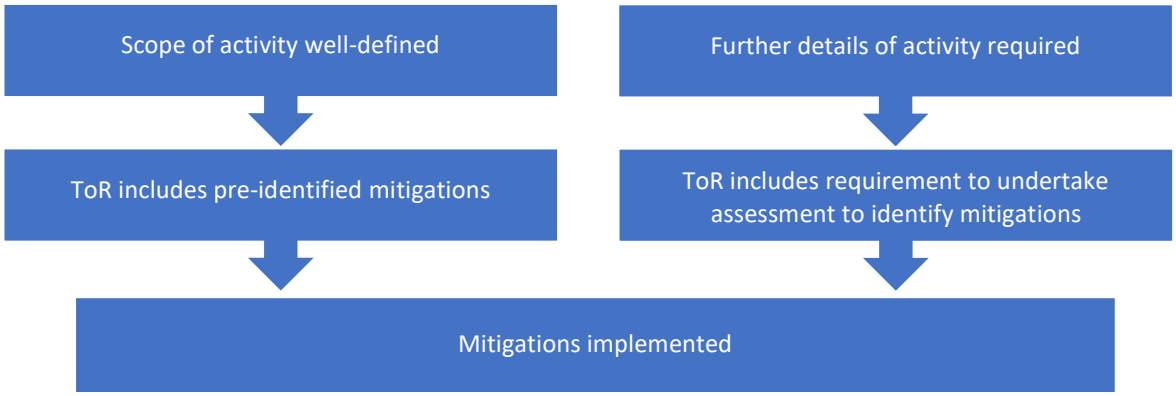
Healthy coral reefs, seagrass beds, mangroves and coastal wetland habitats provide a vital role in climate resilience and adaptation by offering protection from increasing threats from sea level rise, floods and storm events, and help mitigate climate change through carbon sequestration. Coastal ecosystems in the PICs further produce some of the world's most significant marine biodiversity, yet ecosystem health is diminishing with decrease in water quality from erosion, runoff, and marine pollution, as monitored and reported by the 2020 State of the Environment in the Pacific Islands Regional Report. Degradation of lagoon, reef and essential coastal fish and shellfish habitats all contribute to reduce the natural productivity of aquatic living resources and the safety of seafood products. Support to customary and co-management arrangements, as well as to improved local government extension services, local access to national Government funding and resources, and livelihood diversification in the fish value chains and beyond, through Social Protection systems and financial services, can help improve the effectiveness of coastal fisheries management measures, help cushion their potential short-term impacts, help develop environmental and economic resilience, and help release the full potential of coastal fisheries for long-term contribution to national and communities' wellbeing.

5. Environment and Social Risk Management Process

The Project is being implemented to strengthen regional collaboration and national capacity for the management and the sustainable development of the oceanic and coastal fisheries sector in Tuvalu, which is thus expected to result in long-term positive environment and social impacts. In the short to medium term, however, environmental and social risks are assessed to be Moderate and require management.

The detailed process for assessing and managing environmental and social risks associated with each activity is provided in the following sections. For some activities the risks will be managed by including pre-identified mitigations into the terms of reference (ToR) for the activity. For activities where there is not currently enough detail to fully assess them in this ESMP, the ToR will include a requirement to undertake an assessment and develop appropriate mitigations. This overview is show in Figure 8.

Figure 8: Overview of process for assessing and managing environmental and social risks



The detailed process for managing risk and impacts associated with general project activities is provided in Section 5.1. The specific procedures for managing the risks associated with the milk fish farm upgrade (subcomponent 3.2c), coral rehabilitation projects (subcomponent 3.2b), and construction of a watchtower (subcomponent 3.1a) are provided in sections 5.2, **Error! Reference source not found.** and REF _Ref135658603 \r \h * MERGEFORMAT 5.4, respectively.

5.1. General activities

5.1.1. Background

General activities include all activities that are not specifically covered in sections 5.2, **Error! Reference s ource not found.** and 5.4. General activities include:

- Technical advisory, such as assistance for developing legislation, policies, management agreements, operating procedures and data management.
- Procurement of equipment and technology, such as procurement of safety equipment; laboratory consumables; IT and communication equipment; vessels for exploratory fishing, patrols and to support MSC; and roll-up ramps and floating jetties.
- Supporting fisheries and environmental surveys, such as the fishing and bait trials; creel survey monitoring; UVC of the FCA; research on spawning aggregations.

- Undertaking studies to assess the technical feasibility and the cost of establishing and operating permanent fishery infrastructure; inform marketing and post-harvest development; promotion of clam farming at the existing hatchery; and assessing assess the viability of new milk-fish farms.
- Financial support to an existing NGO to continue their work with coral rehabilitation. Further information about this work is provided in Appendix 4.
- Various training activities to be provided by external training providers and technical assistance experts.

5.1.2. Potential Impacts/Risks and Mitigations Measures

The risks and impacts from general activities primarily relate to:

- Occupational health and safety.
- Community health and safety.
- Adequacy of consultation.
- Generation of waste (e-waste, packaging, old safety equipment, batteries, oils/lubricants, etc).
- Site selection for the roll-up ramps and floating jetties.
- Procurement and use of the exploratory fishing vessel (such as risk of spills during vessel refuelling and/or maintenance)
- Potential for downstream (i.e., future) environmental and social risks and impacts associated with technical assistance for legislative and policy change. Although this risk is low, the details of the proposed legislation and policy changes are not yet known and therefore it will need to be assessed during project implementation.
- Risk of underutilised Project investments due to inadequate training and equipment maintenance and unrealised Project benefits.

Details of the potential impacts/risks, mitigations measures and responsibilities for general activities are provided in Table 3.

In addition to these risks, subcomponent 3.1c will involve the implementation of natural resource management plans (i.e., marine protected areas for coastal fisheries) and may result in the loss of access to natural resources that support subsistence and customary livelihoods, and local food and income security. Such impacts would typically trigger ESS5, however, the impacts on vulnerable people are proportionate to the benefits that they will receive through better managed fisheries. Thus, there are not differentiated impacts. The Funafuti Kaupule went through a comprehensive consultation process to establish the Funafuti Conservation Area, and this included consultation with women, young people, and vulnerable people and their views were considered were considered in the consultations and deliberations undertaken by/within the Falekaupule. The scope of ESS5 does not apply where restrictions of access to natural resources under community-based natural resource management projects, i.e., where the community using the resources collectively decides to restrict access to these resources, provided that the community decision-making process is adequate and reflects voluntary, informed consensus; and that appropriate measures have been agreed and put in place to mitigate adverse impacts, if any, on the vulnerable members of the community. Details of the consultation process and justification for not triggering ESS5 is provided as Appendix 4.

Table 3: Potential impacts/risks, mitigations measures and proposed monitoring – general activities

Risks and Impacts	Mitigation Measures	Responsibilities	Applicable subcomponents
Planning			
Equipment procured does not comply with safety standards, resulting in injury when used	MM1: Safety standards for equipment to be included in bidding documents and provided to recipients where appropriate.	TFD	1.1d 2.1b 2.1c 2.1d 2.2c 2.2e
Vessels procured do not meet specifications, resulting in injury when used	MM2: Procurement packages, responses to tender and received goods to be reviewed/inspected by suitability qualified person (e.g., naval architect).	TFD	2.1a 2.2a 3.1c
Feasibility studies do not consider E&S requirements of the future project financiers / donors, resulting in project unable to receive funding and/or downstream (i.e., future) impacts when projects are implemented	MM3: TORs for studies to include the requirement for a high-level assessment of potential E&S risk/impacts in alignment with E&S requirements of the future project potential financiers/donors. TORs to be reviewed by the PMU E&S Officer and the WB. MM4: Any aquaculture promotion / recommendations must be in alignment with the IFC EHS Guidelines for Aquaculture.	TFD to prepare TORs. PMU E&S Officer to review TORs. WB to review TORs.	2.2b 2.2d 3.2c 3.2d

Location of roll up ramps and floating jetties not suitable (i.e., does not meet community needs and/or causes land disputes and/or damages environment)	MM5: Undertake consultation with community, in particular fishers, as part of the site selection process to understand what sites would be suitable for their needs. MM6: Use only Kaupule or government land for the roll up ramps and floating jetties to avoid land disputes. MM7: Place roll up ramps and floating jetties in areas that would not result in damage to sensitive habitat such as mangroves or reef. MM8: Undertake a concise Rapid Site and Options Assessment for possible sites in consultation with the island Kaupule and Tuvalu Lands Department. This includes: a) Identifying the site requirements for the equipment, including:[16]: i. amount of land required for specified equipment, ii. access requirements for equipment, for example, whether the equipment will need to be accessed via another land parcel. iii. adjacent supplementary uses associated with the equipment (e.g., vessel storage locations), b) Identifying specific locations and footprint of the equipment, access and supplementary uses for each potential site and document on a map, preferably in GIS polygon format. c) Verifying boundaries and ownership/leasehold status of all land parcels containing any part of the footprint of the equipment, access, and supplementary uses, d) Identifying all land uses and land users either formal, informal and/or temporary on footprint. e) Identifying possible stakeholders to be consulted, status of, and any outcomes of consultation to date. f) Identifying sensitive habitat (such as mangroves or reef) that may be affected the ramps/jetties including directly affected through placement of the infrastructure and indirectly through use of the infrastructure. g) Preparing a Rapid Site and Options Assessment document with	TFD TFD TFD	2.2b

Risks and Impacts	Mitigation Measures	Responsibilities	Applicable subcomponents
	a combination of site diagrams, data and maps and relevant site information.		
Implementation			
Occupational Health and Safety (OHS) risks for workers installing IT and communication equipment, and fitting out the MSC operation centre, resulting in injury	MM9: The contractor(s) undertaking works shall comply with good practice regarding workers' safety, such as OHS section of the IFC EHS Guidelines on Construction and Decommissioning, and implement the following at a minimum: • Develop and follow a site-specific occupational health and safety (OHS) procedures that are compliant with the World Bank Environment and Health and Safety Guidelines (EHSGs) and local regulations. OHS procedures must be submitted to the PMU for approval prior to any physical works commencing • Appoint a health and safety officer at site, who will have the authority to issue directives for the purpose of maintaining the health and safety of all personnel authorized to enter and or work on the site • Prepare and implement a simple action plan to cope with risk and emergency (e.g., fire, storm surge, cyclone, COVID-19 outbreak) • Complete different levels of risk assessment, i.e. from whole Job Safety Analysis down to the personal level, to identify any potential hazards, rank the risks, and identify ways to eliminate, control or minimize the hazards • Ensure all personal have the appropriate licences (if required) for their scope of work • Provide project workers with accessible means to raise workplace concerns as outlined in the LMP.	Contractor to prepare and implement OHS procedures. PMU E&S Officer to review/approve contractor- OHS procedures. PMU E&S Officer to confirm Contractor has appointed dedicated health and safety office.	1.1d 2.1c

[16] It is expected that these site requirements will generally be the same for each site according to equipment type.

Risks and Impacts	Mitigation Measures	Responsibilities	Applicable subcomponents
Resource efficiency issues Land and/or water pollution from improper waste disposal	MM10: Solid waste (e.g., laptops, monitors, keyboards, radios, phones, cabling, modems, life jackets, packaging, spent batteries, etc) shall be sent back from outer islands to Funafuti as necessary and disposed of in the following order of preference: (1) reused, (2) refurbished, (3) recycled, (4) sent to an authorized overseas facility (due to limitations with landfills in Tuvalu).	TFD	1.1d 2.1b 2.1c 2.1d 2.2c 4
Legislative and policy change results in downstream (i.e., future) environmental and social risks	MM11: Terms of reference (TORs) for each scope of work relating to legislative and policy change to include requirement to consider potential downstream environmental and social risks. TOR be reviewed by the PMU E&S Officer and WB.	TFD to prepare TORs. PMU E&S Officer to review TORs. WB to review TORs.	1.1a 1.1b 1.2a 1.2b 1.2c
Activities do not include appropriate consultation component leading to findings / outcomes missing key information	MM12: Terms of reference (TORs) for each scope of work to include consultation component and requirement to prepare activity-specific Stakeholder Engagement Action Plans (SEAPs). TORs and SEAP to be reviewed by the PMU E&S Officer.	TFD to prepare TORs. Consultant to prepare activity-specific SEAP. TFD to prepare TORs. and activity-specific SEAP.	1.1a 1.2a 1.2b 1.2c 1.3a 2.2a 2.2b 2.2d 2.2e 3.1a 3.1b 3.1c 3.2c 3.2f
Safety risks associated with undertaking fisheries and environmental surveys (e.g., vessel use, scuba diving, remote work, COVID-19 transmission, etc), leading to injury or illness	MM13: TORs for studies to include requirements for preparation of SOPs and/or Job Hazard Analyses (JHAs) to cover fieldwork aspects of the scope. TORs and prepared safety documents to be reviewed by the PMU E&S Officer. The SOPs/JHAs should cover the following aspects, as applicable: boat handling; SCUBA diving; snorkelling; fauna interaction; emergency preparedness and response. Existing TFD procedures may be used if adequate.	TFD to prepare TORs as necessary. Consultant to prepare SOPs and/or JHAs. PMU E&S Officer to review TORs and consultant-prepared safety documents.	3.1a 3.1b 3.2a 3.2f

Risks and Impacts	Mitigation Measures	Responsibilities	Applicable subcomponents
Various risks associated with training, specifically the scope of training not appropriate (e.g., content not suitable, lacks certification, etc); selection of participants misses important groups/individuals; training records not kept	MM14: TORs for training activities to clearly specify the objectives of the training and any certifications, etc., that are required of the trainer and/or need to be provided to the participants following successful completion of the training. MM15: Consultation to be undertaken as part of the selection of the participants for training; and participants for training shall include individuals from vulnerable groups that may benefit from the training. MM16: Training records to be kept.	TFD to prepare TORs and review training proposals to ensure they meet TORs. TFD to undertake consultation and review selection of proposed training participants. TFD to keep training records.	1.1c 1.3b 2.1a 2.1b
Gender Based Violence, Sexual Exploitation, Abuse, Harassment and Violence against Children	MM17: Implementation of LMP, including Code of Conduct (CoC) for workers. Orientation training to include expectations for workers with respect to Gender Based Violence, Sexual Exploitation, Abuse, Harassment and Violence against Children (in line with contents of CoC). Implementation of Worker GRM and Project GRM.	TFD, contractors and consultants to implement LMP including Health and Safety and adherence to CoC. PMU E&S Officer to provide orientation to workers.	All
Operations			
Safety risks associated with use of patrol vessel, exploratory fishing vessel and vessel procured to support the watchtower operations leading to injury. Accidents at sea are a common occurrence across the Pacific and is often exacerbated by bad weather, engine failure, poor vessel construction, overloading, prolonged trips, and limited safety equipment, training or	MM18: Prepare and implement SOPs for Vessel Use (which includes mitigations for refuelling and safety at sea) and Vessel Maintenance (which includes spill prevention and response; and disposal of hydrocarbon waste).	TFD to prepare TORs for the exploratory fishing vessel that includes standards/requirements for safety and vessel maintenance, including minimum training requirements in line with GIIP. Contractor to prepare SOPs for vessel use and vessel maintenance. PMU E&S Officer to review TORs and contractor-prepared safety and maintenance documents.	2.1a 2.2a 3.1c

Risks and Impacts	Mitigation Measures	Responsibilities	Applicable subcomponents
knowledge. Land and/or water pollution from spills during vessel refuelling and/or maintenance and/or improper disposal of hydrocarbon waste generated during maintenance (e.g., lubricants, oils, etc). Maintenance skills and regimes, and availability of spare parts for vessels, particularly in remote areas, is unknown but is unlikely to be at an international standard.		TFD to prepare SOPs for safety and vessel maintenance, including minimum training requirements in line with GIIP (for vessel to be used by TFD)	
Risk of underutilised Project investments due to inadequate training and equipment maintenance (e.g., drones; IT equipment; floating jetties and roll-up ramps; VMS; laboratory equipment).	MM19: Include training and equipment maintenance requirements in TOR for relevant scopes.	TFD to prepare TORs.	1.1d 2.1c 2.2b 2.2c 3.1c 3.2e

5.1.3. Screening and Risk Management Process

Sub-activity work for general activities will go through a simple screening and assessment process. The process is as follows:

Step 1. The PMU E&S Officer (with support from the CPMO E&S Team and WB E&S specialists as required) will screen the scope of work against the Ineligible Activity List provided in Table 4. Activities on this list are not eligible for funding under TV PROPER. The results of the screening are to be documented in the TOR to be prepared under Step 2.

Table 4: Ineligible Activity List

Ineligible activities are activities that:

- may cause long term, permanent and/or irreversible adverse impacts (e.g. loss of major natural habitat)
- have potential to cause significant loss or degradation of critical natural habitats (e.g., reefs, mangroves, forest areas which have not previously been cleared or disturbed) whether directly or indirectly
- have high probability of causing serious adverse effects to human health and/or the environment
- would result in adverse impacts on cultural heritage
- could affect sites with archaeological, paleontological, historical, religious, or unique natural values
- may have significant adverse social impacts and may give rise to significant social conflict
- may involve permanent resettlement or land acquisition
- involve the demolition or removal of assets, unless the ownership of the assets can be ascertained, and the owners are consulted
- would result in adverse impacts on involuntary taking of land, relocation of households, loss of assets or access to assets that leads to loss of income sources or other means of livelihoods, and interference with households' use of land and livelihoods
- use goods, equipment or lands abandoned due to social tension/conflict, or the ownership is disputed or cannot be ascertained
- involve the demolition or removal of assets, unless the ownership of the assets can be ascertained, and the owners are consulted
- involve forced/conscripted labour, child labour (under the age of 18), or other harmful or exploitative forms of labour
- use goods and equipment for military or paramilitary purposes
- risk the introduction of alien and potentially invasive alien species
- involve major construction and civil works that would cause significant adverse impact and require a full ESIA report according to the national ESIA regulation.

Step 2. TOR for all studies and works will be reviewed by PMU E&S Officer (with support from the CPMO E&S Team as required) and WB E&S specialists prior to procurement notification. This review will ensure that TOR in each case make appropriate reference to:

- E&S risks.
- Mitigations specified in Table 3 of this ESMP.
- Project E&S instruments.
- Contractor/task specific plans that are required (e.g., OHS Procedures, SOPs/JHAs, Waste Management Plans and activity-specific SEAPs).
- Applicable standards where relevant.

- Results of the screening undertaken as part of Step 1 (e.g., commitment that the scope of work does not include activities on the Ineligible Activity List).

Step 3. Each proposal received will be reviewed by the PMU E&S Officer to verify that proponents have adequately addressed E&S risk and measures set out in the TOR as appropriate. This will include a review of contractor/task specific plans where applicable. The PMU E&S Officer will advise the PMU Project Coordinator of any concerns or issues.

Step 4. Project procurement will ensure E&S concerns or issues raised by PMU E&S Officer are fully accounted for in the selection process.

Step 5. All deliverables are to be reviewed and approved by the PMU E&S Officer and WB E&S specialists to determine adequacy of attention to E&S risks.

5.1.4. Risk Assessment and Rating

The risk rating of the identified potential negative environmental and social impacts has been determined by assessing and rating the risks using the available information, professional judgment and experience from similar development projects. The ratings are based on:

- Likelihood of occurrence – a measure of the likelihood of the impact to occur
- Consequence of the impact – a measure of the consequence of the impact (e.g., severity, duration, importance, etc)

The risk rating takes into consideration the implementation of the proposed mitigation (i.e., it is a post-mitigation assessment). The risk rating of the impact has been determined by the product of likelihood and consequence. Table 5 provides the risk rating of the impacts associated with the various subcomponents. The risk rating was assessed as Low for most potential impacts/risks. Safety risks associated with use of vessels and some surveys scopes were assessed as Medium, along with potential spills from refueling and vessel maintenance.

Table 5: Risk assessment and rating

Risks / Impacts	**Applicable subcomponents**	**Likelihood** Very likely to occur=3 May occur=2 Unlikely to occur=1	**Consequence** Significant=3 Moderate=2 Minor=1	**Risk Rating** High=7-9 Medium=4-6 Low=1-3
Planning				
Equipment procured does not comply with safety standards, resulting in injury when used and/or failure to mitigate risk as intended	1.1d	1	3	3 - Low
	2.1b	1	3	3 - Low
	2.1c	1	3	3 - Low
	2.1d	1	3	3 - Low
	2.2c	1	3	3 - Low
	2.2e	1	3	3 - Low
Exploratory fishing vessel procured does not meet specifications, resulting in injury when used	2.2a	1	3	3 - Low
Feasibility studies do not consider E&S requirements of the future project financiers / donors, resulting in project unable to receive funding and/or downstream (i.e., future) impacts when projects are implemented	2.2b	To be determined during project implementation as part of E&S assessment to be undertake as per study TOR		
	2.2d			
	3.2c			

Location of roll up ramps and floating jetties not suitable (i.e., does not meet community needs and/or causes land disputes and/or damages environment)	2.2b	1	2	2 - Low
Implementation				
Occupational Health and Safety (OHS) risks for workers installing IT and communication equipment, and fitting out the MSC operation centre, resulting in injury	1.1d	1	2	2 - Low
	2.1c	1	2	2 - Low
Resource efficiency issues Land and/or water pollution from improper waste disposal	1.1d	1	2	2 - Low
	2.1b	1	2	2 - Low
	2.1c	1	2	2 - Low
	2.1d	1	1	1 - Low
	2.2c	1	1	1 - Low
	4	1	2	2 - Low
Legislative and policy change results in downstream (i.e., future) environmental and social risks	1.1a	To be determined during project implementation as part of E&S assessment to be undertake as per study TOR		
	1.1b			
	1.2a			
	1.2b			
	1.2c			
Activities do not include appropriate consultation component leading to findings / outcomes missing key information	1.1a	1	2	2 - Low
	1.2a	1	2	2 - Low
	1.2b	1	2	2 - Low
	1.2c	1	2	2 - Low
	1.3a	1	1	1 - Low
	2.2a	1	1	1 - Low
	2.2b	1	1	1 - Low
	2.2d	1	2	2 - Low
	2.2e	1	2	2 - Low
	3.1a	1	2	2 - Low
	3.1b	1	2	2 - Low
	3.1c	1	2	2 - Low
	3.2c	1	2	2 - Low
	3.2f	1	2	2 - Low
Safety risks associated with undertaking fisheries and environmental surveys (e.g., vessel use, scuba diving, remote work, COVID-19 transmission, etc), leading to injury or illness	2.2a	2	2	4 - Medium
	3.1a	2	1	2 - Low
	3.1b	2	1	2 - Low
	3.2a	2	2	4 - Medium
	3.2f	2	2	4 - Medium
Various risks associated with training, specifically the scope of training not appropriate (e.g., content not suitable, lacks certification, etc); selection of participants misses important groups/individuals; training records not kept	1.1c	1	1	1 - Low
	1.3b	1	1	1 - Low
	2.1a	1	1	1 - Low
	2.1b	1	2	2 - Low
Gender Based Violence, Sexual Exploitation, Abuse, Harassment and Violence against Children	All	1	3	3 - Low

Operations				
Safety risks associated with use of vessel (patrol vessel, exploratory fishery vessel, fisheries enforcement vessel), leading to injury	2.1b 2.2a 3.1c	1 2 2	3 3 3	3 – Low 3 – Low 3 – Low
Land and/or water pollution from spills during vessel refuelling and/or maintenance and/or improper disposal of hydrocarbon waste generated during maintenance (e.g., lubricants, oils, etc)	2.1b 2.2a 3.1c	2 2 2	2 2 2	4 – Medium 4 – Medium 4 - Medium
Risk of underutilised Project investments due to inadequate training and equipment maintenance (e.g., drones; IT equipment; floating jetties and roll-up ramps; VMS; laboratory equipment).	1.1d 2.1c 2.2b 2.2c 3.1c 3.2e	2 2 2 2 2 2	2 2 2 2 2 2	4 – Medium 4 – Medium 4 – Medium 4 – Medium 4 – Medium 4 - Medium

5.2. Vaitupu Milkfish Farm Upgrade

5.2.1. Background

The potential risks and impacts from Project activities relating to the upgrade of the Vaitupu milkfish farm will depend on the scale and type of support provided.

The existing farm has a production rate of around only a few hundred kilograms per year from ponds (Figure 9), but in the past production has been much higher when sea cages were operational (Figure 10). New sea cages are planned to be deployed in 2023, however, the operation will still be very small scale with only four 4 x 4 m sea cages planned. The operation involves collection of wild fry from the lagoon, raising of the fry in earthen ponds and will include final grow-out in sea cages once they are deployed. The milkfish are fed imported feed when available (locally produced when not) and are harvested when they are around 6 months old and around 0.3 kg. Most of the product is sold domestically to residents of Vaitupu but there is strong demand in Funafuti and other islands. The product is typically sold fresh and/or frozen.

Figure 9: Milkfish farm ponds on Vaitupu

Nursery pond

Grow-out pond

Source: FAO, 2012. Development of community-based aquaculture system and management of inshore fisheries for food security in Tuvalu.

Figure 10: Sea cages

Source: FAO, 2012. Development of community-based aquaculture system and management of inshore fisheries for food security in Tuvalu.

5.2.2. Potential Risks and Impacts

Providing assistance to community farming may have a positive impact on other fish stocks by reducing fishing pressure, and therefore improve the sustainability of fisheries in Tuvalu. Changes to the existing farm may also have negative impacts. While these are unlikely to be significant, they may include:

- Expansion to the current operation resulting in:
    - additional pressure on wild populations of milkfish from additional harvest of fry from the wild, although the project may focus on collection of fry from an area where they currently get stranded during neap tides and die (and hence not impact wild populations)
    - additional space taken up by seas cages and therefore fewer fishing grounds for community use
    - additional land taken up for ponds and therefore less land available for community use, although the ponds are typically in inter-tidal areas that are not much used by the community
    - additional nutrients entering the system (from additional un-used feed and milkfish excrement), although the operation is very small scale. Expert advice has also been sought on the carrying capacity of the lagoon.
- Changing the source of feed resulting in:
    - changed nutrient load entering the system
    - pressure on wild populations of fish that are used in the feed
- Changing the source of fry may result in changed genetic make-up of wild populations if fry sourced from hatcheries (due to potential of escaped farmed milkfish breeding with wild populations)

In addition, there are OHS risks for workers installing any new equipment, etc., that may be procured as part of the update along with OHS risk associated with the ongoing operation of the farm.

5.2.3. Assessment Process

Proposed changes to the current operation would need to be in alignment with the EHS Guidelines for Aquaculture and may require a permit through the DoE, depending on the proposed scale of the operation (see Section 3.1.3).

The proposed changes would need to be screened and assessed. The screening and assessment process is as follows:

Step 1. TOR for the international TA expert consultant will include a requirement to undertake an E&S assessment of the proposed changes to the current operation and prepare required E&S risk management plans. The TOR will be reviewed by PMU E&S Officer (with support from the CPMO E&S Team as required) and WB E&S specialist prior to procurement notification. This review will ensure that TOR make appropriate reference to the E&S assessment, which should include:

- Overview of the environment and social setting.
- Details of the current operation and proposed changes.
- Applicable legislation.
- Results of consultation undertaken regarding the proposed changes, including consultation with DoE to confirm if a permit would be required for the works.
- Identification of E&S and OHS risks/impacts and proposed measures to mitigate such risks/impacts. The Environmental and Social Code of Practice (ESCoP) for Small Infrastructure (Appendix 1) can be used to support the identification and mitigation of general construction-related risks/impacts.
- Identification of benefits (or positive impacts) associated with the proposed changes.
- Review of the proposed changes against the EHS Guidelines for Aquaculture.
- If additional land is proposed to be used as part of the operation, requirement to undertake a concise Rapid Site and Options Assessment. The assessment would be undertaken in consultation with the island Kaupule and Tuvalu Lands Department and include:
    - Identifying the land requirements.
    - Verifying boundaries and ownership/leasehold status of all land parcels containing any part of the footprint.
    - Identifying all land uses and land users either formal, informal and/or temporary on footprint.
    - Identifying possible stakeholders to be consulted, status of, and any outcomes of consultation to date.
    - Identifying sensitive habitat (such as areas of primary vegetation) that may be affected the proposed use of the land.
    - Preparing a Rapid Site and Options Assessment document with a combination of site diagrams, data and maps and relevant site information.
- Preparation of required (or update of existing) E&S management plans, including for example (but not limited to), occupational health and safety management plans.

Step 2. The E&S assessment will be reviewed by the PMU E&S Officer to verify that consultant has adequately implemented the E&S assessment and management requirements in their TOR as appropriate. The WB E&S specialist will also review the E&S assessment and management plans and provide feedback as necessary. Based on this review, the WB E&S specialist will determine the level of risk as per the WB Environmental and Social Policy for Investment Project Financing (see Section 3.2.2) and determine if further approvals, assessments or risk management actions (e.g., development of SOPs, management plans) are required from the WB, and provide no objection if not.

Step 3. If further assessment, management or operational plans, or approvals are required for WB and/or DoE purposes, these will be undertaken as part of Step 3.

Step 4. Once all necessary approvals/no objection are obtained, the PMU E&S Officer will liaise with the Project procurement team to ensure all relevant E&S documents are included in the procurement packages.

Step 5. Oversight of the construction works to be undertaken by the PMU E&S Officer

Step 6. Monitoring and reporting of compliance with management plans to be undertaken by the party undertaking the construction works and provided to the PMU E&S Officer who will report this to the WB in line with the requirements in the ESCP.

Step 7. The aquaculture operator (with assistance from the TFD if required) to update their operational management documents as required to account for changes in operation and considering any applicable commitments from the E&S assessment and any other relevant documents (e.g., permit conditions, documents supporting additional E&S approvals, etc).

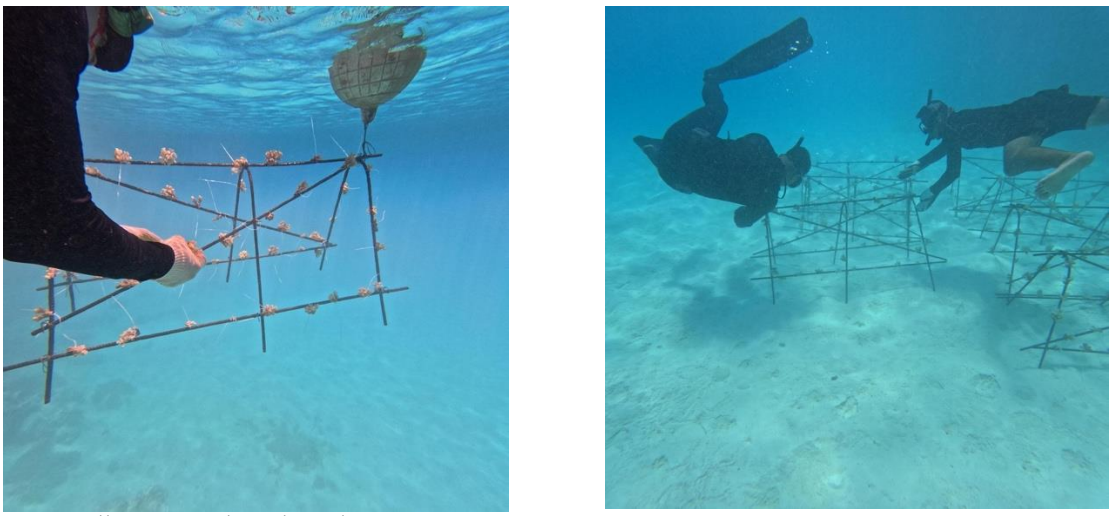
5.3. Coral rehabilitation

5.3.1. Background

Subcomponent 3.2b will provide funding to undertake coral rehabilitation works. The works are planned to be undertaken by Fuligafou, the main local non-government organisation (NGO) currently involved in coral rehabilitation in Tuvalu. The funding will be used to pay a daily subsistence allowance for the volunteers who will be involved in the works.

The coral rehabilitation subprojects in Tuvalu typically involve rebuilding reefs that have been degraded due to coral bleaching. This involves transplanting pieces of healthy coral that is resistant to bleaching, called super corals (typically species of acropora) to the damaged areas of the reef, where they can grow and help to rebuild the damaged areas. The small pieces of donor coral are attached to a frame (**Error! Reference source not found.**) and then placed in nursery areas to allow the coral to g row for approximately 12 months before being transplanted at the rehabilitation sites. In some instances, nursery sites are not used, and the donor coral is directly transplanted to the rehabilitation site.

Figure 11: Coral rehabilitation on Nui Island



Source: https://www.undp.org/pacific/stories/no-fish-no-peace-why-coral-restoration-vital-tuvalu

Previous studies have shown that coral rehabilitation on the northern and western sides of islands/atolls in Tuvalu is often unsuccessful, likely due to the environmental conditions (such as storm surges). The southern and eastern sides of islands/atolls are more protected and coral rehabilitation in these areas is generally more successful.

The rehabilitation works funded by the Project will focus on shallow and lagoon areas to the south and east of islands/atolls, targeting LMMAs and other conversation areas. As the corals to be harvested and rehabilitation areas are shallow, the use of SCUBA will not be required, thus reducing the cost and OHS risks associated with the Project.

5.3.2. Potential Risks and Impacts

While designed to rehabilitate areas where coral has been damaged (typically due to bleaching), such activities also potential for negative environmental and social risks/impacts. These include:

- occupational health and safety associated with undertaking the works
- impacts to reef where coral fragments are harvested, although this is limited given very small prices of coral are used.

To balance the potential negative environment impacts and enhance the potential positive impacts, it is important to select coral rehabilitation subprojects that have the highest likelihood of success. This is why the Project will rehabilitate reef areas that are on the south and east of islands/atolls and target LMMAs and other conversation areas as these areas are under protection.

5.3.3. Assessment Process

Step 1. A Request for Proposal (RFP) for the coral rehabilitation works will be prepared by the TFD. The RFP will be reviewed by PMU E&S Officer (with support from the CPMO E&S Team as required) and WB E&S specialist. This review will ensure that RFP makes appropriate reference to the proposal requirements, which should include:

- detail of a workplan, including schedule, budget, logistics and resources
- experience of the NGO with similar projects
- ability to manage health and safety risks, including for community workers (i.e., volunteers) and a draft 'Code of Practice for Volunteer Workers'

- details of proposed rehabilitation sites and source of healthy coral
- reporting requirements.

Step 2. The NGO who will carry out reef restoration works (Fuligafou) will prepare a proposal that will include the items specified in the RFP. The proposal will be reviewed by the PMU E&S Officer to verify that NGO has adequately addressed the requirements as appropriate, with a focus on health and safety aspects.

Step 3. Once the proposal has been accepted, the PMU E&S Officer will liaise with the Project procurement team to ensure all relevant OHS documents are included in the procurement package.

Step 4. Oversight of the works to be undertaken by the PMU E&S Officer, including the finalisation and implementation of the 'Code of Practice for Volunteer Workers'

Step 5. Monitoring and reporting of compliance with OHS processes to be undertaken by the NGO and provided to the PMU E&S Officer who will report this to the WB in line with the requirements in the ESCP.

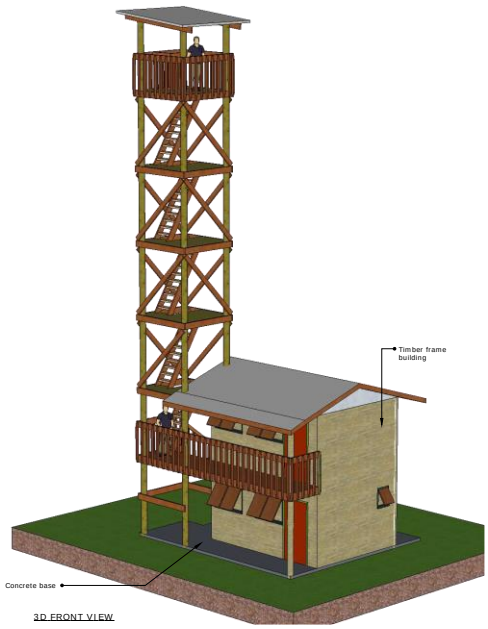
5.4. Watchtower

5.4.1. Background

Subcomponent 3.1c includes the construction of a watchtower to strengthen management of the FCA. The proposed watchtower would be a surveillance site for FCA to gather evidence of illegal fishing activities in the conservation area for providing to authorities for action. The watchtower will not be used for military or paramilitary purposes. The Funafuti Kaupule will oversee the operations and hiring of the watchman (on a rotational basis between the various members of the landowners of the Funafuti Conservation Area). As the watchtower will be manned permanently, the watchtower will also include living facilities (kitchen area, bathroom, living space).

The concept design for the watchtower is provided in Figure 12.

Figure 12: Concept design for the watchtower



There are three locations that have been investigated for the watchtower. These are Fuafatu Islet, Fualopa and Tepuka Islet, although the Fuafatu Islet site is currently the preferred location. The Tepuka Islet site is on private land and the Fualopa and Fuafatu Islet sites are on Kaupule land. Fualopa

Islet has been excluded from site considerations due to initial investigations as part of PROP determining that biodiversity impacts, namely adverse impacts on nesting sites for migratory birds, were not justifiable where viable alternative sites exist. Investigations by the PMU environmental specialist on Fuafatu and Tepuku Islet have not found such sensitive receptors and thus these sites have been retained for consideration. Similarly, Tepuka Islet has now been excluded as land ownership investigations for the islet have found that it is privately owned and this makes it unsuitable due to the Project's commitment to only using government, Kaupule land or Kaupule-leased land.

A Construction-ESMP (C-ESMP) was prepared for the subproject at Tepuka Islet during TV PROP, albeit this C-ESMP was not prepared to meet the current WB ESF as TV PROP commenced before the WB ESF become effective.

Figure 13: Locations considered for the watchtower

Fuafatu Islet (preferred site) **Fualopa** (now excluded) **Tepuka Islet** (not included for further consideration)

On overview of the advantages and disadvantages of the preferred site at Fuafatu Islet is provided in Table 6.

Table 6: Advantages and disadvantages of the preferred location for the watchtower at Fuafatu Islet

Advantages	Disadvantages

Location of the site situated in the center of the FCA which has high visibility to the southern and northern sites of the FCA. Ground surface is more stable due to the rocky surface dominating the entire island. Protection from storm surges and cyclones - the site has not been devastated due to the geological features of the island and its surrounding area protecting the island (e.g., large coral reefs and intertidal reefs surrounded the island, and the shallow outer reef slope extends more than 1km offshore). Close to two deep channels making it easier to monitor boat/vessel passing through the channels. Funafuti kaupule land – no acquisition needed.	Fuafatu is the farthest islet in the FCA. Movement of coastal beaches. Nesting island for birds and other biodiversity (high abundance of land crabs). Internet coverage cannot reach the site and communications would need to be installed. Some vegetation (albeit small amount) needs to be cleared. Replanting of affected trees is required as part of compensation.

5.4.2. Potential Risks and Impacts

The general risk and impacts associated with the proposed watchtower, including those identified in the previous C-ESMP, are:

- Erosion control and the runoff of suspended solids and pollutants resulting from earthworks, and the development of the exposed areas.
- Pollution and spills resulting from construction activities, including the storage of fuels and vehicle plant refuelling and handling of cement.
- Solid waste management.
- Minor site-specific environmental impacts including limited and offset vegetation clearance and minor disturbance of migratory nesting birds and other biodiversity during construction.
- Fire management.

Depending on the site selected, there will be additional site-specific risks and impacts. The advantages and disadvantages of the site are outlined in Table 6 and provide a high-level overview of these, and they will be assessed in the C-ESMP.

5.4.3. Assessment Process

The environment and social risks and impacts associated with the proposed watchtower would need to be assessed and subproject specific C-ESMP prepared for WB purposes. In addition to assessing the environment and social risks and impacts, an engineer should be engaged to review the design from a structural perspective.

Once there is further information about the subproject design, the TFD should consult with DoE to determine if approvals are required to meet DoE requirements. The assessment and approval process under the Environmental Protection (Environmental Impact Assessment) Amendment Regulations 2018 is provided in Table 2.

The assessment process for WB requirements is outlined in the steps below.

Step 1. Finalise the TOR for a C-ESMP based on the draft TOR provided as Appendix 3 and prepare TOR for structural engineer for design review and construction supervision. The TOR will be reviewed by PMU E&S Officer (with support from the CPMO E&S Team as required) and WB E&S specialist prior to

procurement notification. The TOR should specify that the ESMP needs to meet the requirements of the WB ESF relevant ESSs. The previous C-ESMP and CoESP for Small Infrastructure (Appendix 1) will also be provided to assist in the C-ESMP preparation.

Step 2. Engage consultant to prepare C-ESMP and provide design and supervision engineering services.

Step 3. Consultant to prepare C-ESMP with support from the PMU E&S Officer and WS E&S specialist as required (e.g., for souring information for the assessment and providing details of project scope).

Step 4. The ESMP will be reviewed by the PMU E&S Officer to verify that consultant has adequately implemented the E&S assessment and management requirements in their TOR. The WB E&S specialist will also review the ESMP and provide feedback as necessary to obtain a "no objection" from the WB.

Step 5. Once all necessary approvals are obtained (WB and DoE), the PMU E&S Officer will liaise with the Project procurement team to ensure all relevant E&S documents are included in the procurement packages and all required management plans have been prepared and/or specified in requirements.

Step 6. Oversight of the construction works and adherence to the C-ESMP and any permit issued by DoE to be undertaken by the PMU E&S Officer.

Step 7. Monitoring and reporting of compliance with the C-ESMP to be undertaken by the party undertaking the construction works and provided to the PMU E&S Officer who will report this to the WB in line with the requirements in the ESCP.

5.5. Summary of Training and Procedures

Given that training and preparation of procedures are integral to mitigate the risks associated with many project subcomponents, they have been summarised in **Error! Reference source not found.** for e ase of reference.

Table 7: Summary of training and procedures

Subcomponent	Activity	Training	Procedures (if relevant)
1.1c	Strengthening human resources in TFD through training.	As required to meet activity objective.	
1.1d	Upgrading TFD IT infrastructure and communications to facilitate TFD involvement in virtual settings.	Training to be provided to relevant TDF staff on the use of the updated IT and communications systems.	Develop and follow a site-specific occupational health and safety (OHS) procedure
1.3b	Training on seafood product hygiene.	As required to meet activity objective.	
2.1a	Building capacity to conduct MCS activities through training on dockside and at-sea inspections, boarding, and vessel operation and safety; preparation of the design and specifications for, and procurement of a patrol vessel; and patrols and inspections.	As required to meet activity objective. Training to be provided in order to meet the requirements set out in the Vessel Maintenance and Vessel Use Procedures to be developed.	Vessel Maintenance (to address risk of spills, hydrocarbon disposal, etc) (TFD Procedure) Vessel Use (to address OHS risks) (TFD Procedure)
2.1b	Supporting the development of the observer program through training.	As required to meet activity objective.	
2.1c	Expanding the application of new technology to support MCS, as well as the establishment and fitting out of an MCS operations centre.	Training to be provided to relevant TDF staff on the use of the equipment at the MSC centre.	Develop and follow a site-specific occupational health and safety (OHS) procedure
2.2a	Procurement of an exploratory fishing vessel (to be used by contractors).	Training to be provided in order to meet the requirements set out in the Vessel Maintenance and Vessel Use Procedures to be developed.	Vessel Maintenance (to address risk of spills, hydrocarbon disposal, etc) (Contractor Procedure) Vessel Use (to address OHS risks) (Contractor Procedure)
2.2b	Procurement of floating jetties and roll-up ramps for Funafuti and outer islands for local fishing vessels.	Training on the safe operation of the floating jetties and ten roll-up ramps to be provided to the fishers who would use the infrastructure.	
2.2c	Improving sea safety for domestic fishing fleet as enabling condition for domestic oceanic fisheries development with the testing of and acquisition of a	As required to meet activity objective. Training to be provided in the use of the VMS.	

	VMS for small-scale vessels, consultant services for the development of sea safety regimes and policy, safety equipment (e.g., grab bags and VHF repeaters) and training.		
3.1a	Fisheries data collection	As required by the SOP or JHA	SOPs and/or JHAs to cover fieldwork aspects of the scope
3.1a	Fisheries data collection	As required by the SOP or JHA	SOPs and/or JHAs to cover fieldwork aspects of the scope
3.1c	Acquiring, operating and maintaining MCS drones and coastal vessel[s]	As required to meet activity objective. Training to be provided in order to meet the requirements set out in the Vessel Maintenance and Vessel Use Procedures to be developed. Training to be provided in piloting the drone. Depending on the size of the drones procured, formal drone piloting training may be required.	Vessel Maintenance (to address risk of spills, hydrocarbon disposal, etc) (TFD Procedure) Vessel Use (to address OHS risks) (TFD Procedure) Drone Use
3.1c	Construction of a watchtower	As required by C-ESMP and/or any other procedures to be developed for the scope	C-ESMP and any other documents referenced in C-ESMP
3.2a	Field surveys	As required by the SOP or JHA	SOPs and/or JHAs to cover fieldwork aspects of the scope
3.2b	Coral rehabilitation	On-the-job training	Code of Practice for Volunteer Workers
3.2c	Aquaculture facility upgrade	As required by E&S assessment and/or any other procedures to be developed for the scope	E&S assessment of proposed changes to the current operation to include construction and operational OHS risks and update/preparation of OHS plans if required
3.2e	Supplying laboratory items (e.g., microscopes), consumables (such as reagents, test kits) to the Fisheries Laboratory and providing funding for regular factory maintenance and repairs of equipment.	Training to be provided as required to ensure that laboratory staff are able to use the laboratory items provided.	

3.2f	Field surveys	As required by the SOP or JHA	SOPs and/or JHAs to cover fieldwork aspects of the scope

6. Incident Management

Despite efforts to manage environmental and social risks, there is potential for incidents to occur. An incident is defined as an accident or negative event resulting from failure to comply with the WB E&S requirements, or conditions that occur because of unexpected or unforeseen events during project implementation.

The Project will adopt the incident classifications contained in the "Environmental and Social Incident Response Toolkit for Word Bank Staff". These classifications area as follows:

Indicative incident:

- Relatively minor and small-scale localized incident that negatively impacts a small geographical areas or small number of people
- Does not result in significant or irreparable harm
- Failure to implement agreed E&S measures with limited immediate impacts

Serious incident:

- An incident that caused or may potentially cause significant harm to the environment, workers, communities, or natural or cultural resources
- Failure to implement E&S measures with significant impacts or repeated non-compliance with E&S policies incidents
- Failure to remedy Indicative non-compliance that may potentially cause significant impacts
- Is complex and/or costly to reverse
- May result in some level of lasting damage or injury
- Requires an urgent response
- Could pose a significant reputational risk for the WB

Severe incident:

- Any fatality
- Incidents that caused or may cause great harm to the environment, workers, communities, or natural or cultural resources
- Failure to remedy serious non-compliance that may potentially cause significant impacts that cannot be reversed
- Failure to remedy serious non-compliance that may potentially cause severe or complex impacts and/or be costly to reverse
- May result in high levels of lasting damage or injury
- Requires an urgent and immediate response
- Poses a significant reputational risk to the WB.

All incidents are to be reported to the to the WB as soon as practicable, with all Serious and Severe incidents being reported within 24 hours of their occurrence. The PMU and/or contractor involved in the incident are responsible for also reporting the incident to the relevant regulatory authority if required.

Upon request of the WB, the PMU (with support of the contractor involved, if applicable) shall prepare a report detailing the incident. The report should include the following information:

- Classification of the incident
- What was the incident? What happened? To what or to whom?
- Where and when did the incident occur?
- When and how did the PMU find out about it?
- Are the basic facts of the incident clear and uncontested, or are there conflicting versions? What are those versions?
- What were the conditions or circumstances under which the incident occurred (if known at this stage)?
- Is the incident still ongoing or is it contained?
- Is loss of life or severe harm involved?
- What has been the response to date?
- What remedial action, if any, is required?
- What measures have been or are being implemented to prevent reoccurrence?

The carrying out of any remedial action or implementation of preventive measures to prevent recurrence should be tracked to closure and progress included in the regular progress reports to the WB.

7. Stakeholder Engagement

A stand-alone SEP has been developed to describe the Project's program for stakeholder engagement, public information disclosure and consultation. The SEP outlines the ways in which the project team will communicate with stakeholders and provides a mechanism through which people can raise concerns, provide feedback, or make complaints about the project or any activities related to the project. A summary of the SEP is provided in the following sections. In the event of discrepancy between this summary and the SEP, the SEP takes precedence.

7.1. Stakeholder Identification and Analysis

Stakeholder analysis determines the likely relationship between stakeholders and a project and assists to identify the appropriate consultation methods for each stakeholder group during the life of the project. Stakeholders of projects can typically be divided into the following categories:

- **Affected Parties** – persons, groups and other entities within the Project Area of Influence that are directly influenced (actually or potentially) by the Project and/or have been identified as most susceptible to change associated with the Project, and who need to be closely engaged in identifying impacts and their significance, as well as in decision-making on mitigation and management measures. This also includes stakeholders that contribute to the execution and implementation of a project.
- **Other Interested Parties** – individuals/groups/entities that may not experience direct impacts from the Project but who consider or perceive their interests as being affected by the Project and/or who could affect the Project and the process of its implementation in some way.
- **Vulnerable Groups** – persons who may be disproportionately impacted or further disadvantaged by the Project as compared with any other groups due to their vulnerable status, and that may require special engagement efforts to ensure their equal representation in the consultation and decision-making process associated with the Project. The vulnerability may stem from a person's origin, gender, age, health condition, economic and social status, access to land, natural resources, level of voice and influence in decision-making processes etc.

Stakeholders identified for the Project and their interest in the project are provided in Table 8.

Table 8: Stakeholders and their interest in the Project

Group	Organisation	Interest in the Project
Affected parties		
Tuvalu Government departments and organizations	Ministry of Finance	Executing agency
	Tuvalu Fisheries Department	Implementing agency
	Central Project Management Office	Providing implementation support
World Bank	International Development Association	Financing agency

People in the project area of influence	Individuals and community groups/organizations/businesses that will directly benefit from the Project, including fishers and aquaculture businesses.	These people/groups have the potential to be Project beneficiaries and those near the location of physical works may be potentially affected by the social impacts associated with such works.
Fishers	Owners and crew of Tuvalu-flagged fishing vessel	Interested in the development of a National Fleet Management Policy
	Local fishers	Interested in: • proposed locations for temporary and permanent infrastructure • initiatives to improve sea safety for local fishers • improvement of outer islands coastal fisheries management
Aquaculture facilities	Existing milkfish farm operator at Vaiputu (Vaitupu Kaupule)	Interested in potential upgrade to their existing aquaculture facility
Local governments (Kaupule)	Various throughout Tuvalu	Involved in fisheries management and community-based marine conservation Involved in site selection for roll-up ramps and floating jetties Own land proposed for watchtower
Contractors	Various contractors	Potential to be contracted or subcontracted to support the upgrade of the aquaculture facility and/or watchtower
Suppliers	Various suppliers	Supply of goods and materials to contractors and/or subcontractors involved on the Project
Consultants	Various consultants	Potential to be contracted or subcontracted to undertake feasibility, technical assistance and/or other studies for the Project
Non-Government Organizations involved in coral restoration	Fuligafou	Implementation of coral rehabilitation scope.
Other interested parties		

Non-Government Organizations	Organizations focusing on topics such as: • Fisheries • Aquaculture • Marine environment protection	Interested in the outcomes and benefits of the Project Interested in collaboration with activities
Regional agencies	Pacific Islands Forum Fisheries Agency (FFA)	Interested in support to be provided to observer program
	South Pacific Regional Environment Programme (SPREP)	Interested in marine protection and coral restoration projects
	Secretariat of the Pacific Community (SPC)	Provides support for Coastal Fisheries management at a regional level
	Parties the Nauru Agreement Office (PNAO)	Employs observers and supports oceanic fisheries management in its members' waters
Tuvalu Government departments and organisations	Department of Environment	Permitting of select investments (if required)
Educational institutions	University of the South Pacific	Interested in the outcomes and benefits of the Project Interested in collaboration with activities relating to coral restoration
Development agencies	United Nations Development Programme (UNDP)	Involved in coral restoration projects in Tuvalu
	New Zealand Ministry of Foreign Affairs and Trade (MFAT)	Interested in the support to be provided to the hatchery which is funded by the New Zealand Tuvalu Fisheries Support Programme Phase 2 Team; provides a range of complementary support for fisheries management and development and long-term technical assistance to TFD
	Asian Development Bank (ADB)	Interested in the management of the FCA
	Global Environment Facility (GEF)	Interested in the management of the FCA
Vulnerable groups		

Vulnerable or disadvantaged groups	Including, but not limited to: • elderly • children • youth • poor households • single-parent households • residents in remote areas • people with disabilities • survivors of, and those vulnerable to GBV, SEA/SH and VAC	These people/groups have potential to be Project beneficiaries, however, there is potential for project benefits to not reach such groups. They may also be disproportionately potentially affected by the social impacts associated with the renovation works and it is important to ensure such people/groups are included in the project planning process through mainstreaming or targeted activities.
Non-Government Organizations	Organizations and organisation members focusing on topics such as: • Disability, namely Fusi Alofa • Women's empowerment and economic participation, namely the Tuvalu National Council of Women, and faith-based island women's groups • Youth representatives and organisations • Tuvalu Association of Non-Government Organisations (TANGO).	Interested in the targeting the benefits of the Project to include members and members' interests. Interested in collaboration with activities

7.2. Stakeholder Consultations Undertaken

TV PROPER is an extension of TV PROP which was completed 2021. The PROP Project had a significant stakeholder engagement component the PROPER Project can draw from. The outcomes of engagement undertaken for the PROP Project includes feedback and lessons learned; and has helped inform PROPER Project design.

Stakeholder consultations on the Project design took place between 2021 and September 2022 at corporate and community levels in Funafuti and on the outer islands to ensure synergy of the proposed Project design with the National Sustainable Development Strategy 2021-2030 (Te Kete) and TFD Strategic Plan 2023-2025; and to get community buy in. Consultation also took place at the cabinet level in July 2023. Additional national-level stakeholder consultation is planned for August 2023 in Funafuti.

Details of additional consultation specific to various Project components / subcomponents is provided as an attachment to the SEP.

7.3. Stakeholder Engagement Plan Summary

A summary of the proposed stakeholder engagement and disclosure activities are provided in Table 9. This builds on from the engagement that was undertaken during the previous PROP Project and the relationships that TFD built with stakeholder during its implementation. As indicated previously, specific project activities that require significant consultation with affected persons will develop a

task-specific SEAP prior to the commencement of works which will be reviewed by the PMU E&S Officer.

Table 9: Indicative stakeholder engagement plan and disclosure summary

Project stage	Topic of consultation / message	Method used	Target stakeholders	Responsibilities	Timing
Engagement related to technical advisory					
Implementation	Gather information to support preparing the draft legislation, policies, etc.	Face-to-face meeting; workshops	Various – depends on legislation, policies, etc being developed	TFD, consultant undertaking study	At the commencement of the activity
Implementation	Obtain feedback on the draft documents.	Face-to-face meeting; workshops; email	Various – depends on legislation, policies, etc being developed	TFD, consultant undertaking study	When draft documents have been prepared
Implementation	Disclosure of the final documents.	Website; media release	Various – depends on legislation, policies, etc being developed	TFD, consultant undertaking study	When documents have been finalised
Engagement related to procurement of roll-up ramps and floating jetties					
Planning	Site selection to understand what sites would be suitable for their needs	Focus group discussions	Fishers (likely users of the infrastructure)	Kaupule	During the site selection process for the roll-up ramps and floating jetties
Planning	Site selection to confirm potential sites do not interfere with other uses of the land	Focus group discussions*	Other community members	Kaupule	During the site selection process for the roll-up ramps and floating jetties
Engagement related to fisheries surveys					
Planning	Gather information to support preparing the study design	Focus group discussions	Fishers, NGOs	TFD, consultant undertaking study	At the commencement of the activity
Engagement related to undertaking studies					
Planning and implementation	Gather key information and views, including input from women, men, marginalized and vulnerable groups	Various, to be detailed in task-specific SEP to be prepared by study consultant*	Various, to be detailed in task-specific SEP to be prepared by study consultant.	TFD, consultant undertaking study	Various, to be detailed in task-specific SEP to be prepared by study consultant
Engagement related to training					

Planning	Selection of participants for the training	Face-to-face meetings, virtual meetings	Various, depending on the training	TFD	During the planning for the training
Engagement related to milk fish farm upgrade					
Implementation	Development goals for the farm, what type of improvements would be suitable	Face-to-face meetings	Current operators of the milkfish farm	Consultant	During the study
Implementation	Overview of proposed upgrade and confirm it does not conflict with community land use or fishing grounds	Focus group discussions*	Surrounding community	Consultant	During the study
Implementation	Awareness of proposed upgrade, potential requirement for development permit	Face-to-face meetings	Department of Environment (DoE)	Consultant	Once the scope of the upgrade is understood
Implementation	As required by DoE as part of permitting process – to be confirmed*				
Engagement related to coral rehabilitation projects					
Planning	Awareness of purpose of the coral rehabilitation subprojects; obtain local knowledge of the sites; recruit volunteers to assist with the works; grievance mechanism	Face-to-face meetings, posters, brochures*	Communities where subprojects to take place	NGO undertaking coral rehabilitation	Prior to the commencement of activities on each island/atoll
Implementation	Disseminate awareness of locations of the works so community can avoid disturbing the nursey sites and rehabilitation sites.	Face-to-face meetings, posters, brochures*	Communities where subprojects to take place	NGO undertaking coral rehabilitation	At the commencement of activities on each island/atoll
Implementation	Project progress	Face-to-face meetings, posters, brochures	Communities where subprojects to take place	NGO undertaking coral rehabilitation	Regularly throughout Project activities
Engagement related to the watchtower					

Planning	Design of facility upgrade to ensure it will be fit-for purpose	Face-to-face meetings, emails	End-users (e.g., TFD staff who will be stationed at the watchtower)	TFD	During activity planning stage
Planning	Land access	Face-to-face meetings	Kaupule	TFD	During activity planning stage
Prior to, during and post physical works	Project scope, progress, timing, and the grievance mechanism	Face-to-face meetings, posters, brochures*	Nearby communities	Contractor	Prior to, during and post physical works
Engagement to disseminate information about Project progress and results					
Annually throughout the implementation phase	Key project updates and reports on the project's environmental and social performance	Websites (WB and TFD)	All stakeholders	PMU	Annually throughout the implementation phase
Disclosure					
Prior to implementation	Disclosure of final E&S Instruments (SEP, ESMP and LMP)	Websites (WB, TFD)	All stakeholders	WB, PMU	When documents have been finalised
Early in implementation phase	Project awareness, E&S instruments, availability of the GRM	Face-to-face meetings and community noticeboards	Local governments, fishing communities	PMU	Early in implementation phase

* vulnerable group adapted methods should be applied

7.4. Grievance Redress Mechanism

The Grievance Redress Mechanism (GRM) is a mechanism to receive and facilitate the resolution of stakeholder's concerns, complaints, and grievances about the Project, including concerns relating to environmental and social impacts and issues. The GRM allows stakeholders to comment on or express concern on matters relating to project implementation. It is intended to allow these various stakeholders to pass on important information to higher levels of project oversight and management in a neutral and, if necessary, anonymous way. A formal GRM (as detailed in the SEP) will be implemented by the PMU and will be used for project-related grievances.

8. Implementation Arrangements, Responsibilities and Capacity Building

8.1. Organisation Responsibilities and Structures

8.1.1. Tuvalu Fisheries Department (Implementing Agency)

TFD will be the implementing agency for the Project. TFD has extensive knowledge with WB policies and procedures, having successfully implemented the PROP Project, albeit this project was not completed under the WB ESF, but under the previous WB Safeguards Policies. TFD has established a PMU that will be responsible for the day-to-day management of the Project. The functions of the PMU include:

- financial management
- procurement
- consolidation of workplan and budget
- financial audit
- environmental and social risk management
- monitoring, evaluation and learning.

An E&S Officer will be staffed under the PMU to provide support for implementing the E&S instruments and providing support in managing E&S risks. Additional E&S support will be provided, as required, by the CPMO E&S Team in the form of mentoring, training, etc. When required, individual consultants with specific specialized skillsets and preferably familiar with WB operations will also be recruited to provide support to the PMU.

To avoid project implementation delay, reduce timeline training new staff, the TV PROP Project PMU staff have been maintained because of their previous knowledge of WB operations. They are also involved in project preparation. This will ensure they are familiar with TV PROPER and ultimately lead to smooth transition to implementation. The PMU already has experience in project management, procurement, financial management, E&S management, and monitoring and evaluation, and will remain under the leadership of the Director of Fisheries at the TFD.

The key role within the PMU involved in implementation of E&S instruments is the PMU E&S Officer who has the following responsibilities:

- Implement and monitor all stakeholder engagement strategies/plans for the project.
- Coordinate, facilitate, and where appropriate participate, in face-to-face stakeholder meetings.
- Oversee implementation of any recommended environmental and social mitigation measures set out in the E&S instruments.
- Prepare monthly and 6-monthly monitoring reports on E&S risk management for provision to the WB.
- Helps to resolve any disputes that may arise in the Project, including grievances.
- Review TOR for sub-projects.
- Review task-specific E&S instrument prepared for sub-projects.
- Undertake any future revisions to the E&S instruments.
- Supervise physical works, carry out audits etc., to ensure environmental and social protection and mitigation measures are implemented by contractors.
- Provide training and capacity building support contractors on E&S risk management.
- Storing data (including grievance records), collating and interpreting stakeholder feedback.

8.1.2. Central Project Management Office

The MOF has established a CPMO, which contains Procurement, Fiduciary, and Environmental and Social Risk Management expertise, supporting all WB projects in Tuvalu. Project implementation responsibilities in each case remain with the Project Implementation Units or PMUs.

For the purposes of this ESMP, the key roles within the CPMO are an International E&S Risks Advisor and a Local E&S Safeguards Specialist, collectively the CPMO E&S Team. The CPMO E&S Team will provide support in the form of mentoring and training to the PMU, in particular the PMU E&S Officer. This will include assistance in reviewing documents (such as ESMP, TORs, etc) and advice in resolving issues, where requested by the PMU.

8.1.3. World Bank

The WB E&S team will provide regular E&S risk management compliance monitoring and support for the duration of the project, remotely and during missions, and to build capacity for E&S implementation and stakeholder engagement. The WB team will also review the E&S assessment to be prepared for the upgrade of the milkfish farm at Vaitupu and ESMP for the watchtower.

8.1.4. Construction Contractors

Construction contractor(s) will be required to comply with the Project's E&S risk management plans and procedures, including this ESMP and the LMP, as well as local legislations and this will be specified in the contractor's agreements. Contractor(s) will need to disseminate and create awareness within their workforce of E&S risk management compliance and undertake any staff training necessary for their effective implementation.

Contractor(s) will be required to comply with the specified E&S requirements in their contract and to take all necessary precautions to protect the environment and maintain the health and safety of their personnel and the community. The contractor(s) will appoint a health and safety representative at site, who will have the authority to issue directives for the purpose of maintaining the health and safety of all personnel authorized to enter and or work on the site, to take protective measures to prevent accidents, to ensure suitable arrangements are made for all necessary welfare and hygiene requirements, to undertake worker training.

Construction contractor (s) will provide the PMU weekly updates and monthly reports on E&S risk management through the duration of physical works.

8.2. Capacity Building

The objective of the project (i.e., strengthen regional collaboration and national capacity for the management and the sustainable development of the oceanic and coastal fisheries sector in Tuvalu) is focused on capacity building. Capacity building activities include numerous TA support trips and provision of training.

With respect to the capacity of TFD to implement the WB ESF, it is important to understand that while the previous PMU staff are knowledgeable in WB operations from their experience on the PROP Project, the PROPER Project (unlike the PROP Project) is subject to the WB ESF, and, as such, training is required to provide awareness of the specific requirements of the WB ESF to the PMU. The PMU may need ongoing support, training, and technical assistance to implement the Project E&S documents during project implementation. It is expected that this will be provided by the CPMO E&S Team with support from the WB Task Team as required.

8.3. Budget

An indicative budget for implementing the ESMP, LMP and SEP is provided in Table 10. These items are over and above those considered to be covered by normal operations and normal duties of the CPMO E&S Team, which are covered by CPMO budget. Contractors E&S risk management costs will be incorporated into the Contractor's costs.

Table 10: Implementation budget

Budget Item	Detail	Cost Estimate (TV$) per Year
Stakeholder consultations	Venue hire, media, materials, travel and accommodation costs (to visit project sites on outer islands), etc.	10,000
Capacity development training, awareness raising including SEA/SH	Venue, stationery, training materials and delivery.	7,500
Monitoring and reporting	Travel and accommodation costs (to visit project sites on outer islands) Report production costs.	10,000
GRM related costs	Personnel, communication, transportation, office support costs include SEA/SH	7,500
PMU E&S Officer	To be staffed under the PMU	75,000
Total for 1 year		*110,000*
Total for 6 years		***660,000***

Appendix 1*:* Code of Environmental and Social Practice for Construction

Introduction

This Code of Environmental and Social Practice (ESCoP) has been developed to manage the typical environmental and social (E&S) risks associated with construction of subprojects to be implemented as part of the Tuvalu: Pacific Islands Regional Oceanscape Program – Second Phase for Economic Resilience (TV PROPER; the "Project"). The Project is being implemented by the Tuvalu Fisheries Department (TFD).

Subprojects that involve construction include:

- Subcomponent 3.1c: Design and construction of a watchtower at Fualopa.
- Subcomponent 3.2c: Support for upgrading an existing milkfish farm at Vaiputu.

The ESCoP provides the guidance for on the potential environmental and social impacts/risks, and mitigation measures relating to general construction activities. The construction activities associated with subcomponent 3.1c and 3.2c will be subject to a subproject specific assessment and/or management plan to capture potential risks and impacts specific to these subprojects. This ESCoP will be used to support the assessments and management plans by providing guidance on mitigations for general construction-related activities.

Potential Risks/Impact and Suggested Mitigations

Risks and Impacts	Mitigation Measures
Design of facilities do not meet user requirements.	Consultation with end-users to ensure design of proposed facilities are fit-for-purpose.
Facilities to be renovated may contain asbestos and/or other hazardous materials.	Building inspection(s) to identify whether asbestos or other hazardous materials are present prior to renovations commencing.
Siting of infrastructure results in physical or economic displacement, or restriction of access to natural resources	The acquisition of private land is not permitted. Undertake consultation to ensure proposed site would not result in physical or economic displacement, or restriction of access to natural resources and can be utilized for Project activities.
Noise and vibration generated from civil works – potential impact on sensitive animals	Plan noisy activities in considering times of particular importance to sensitive animals (e.g., bird nesting season) so that noisiest activities are restricted to being undertaken during periods that will result in least disturbance.
Noise and vibration generated from civil works – potential impact on communities	Plan activities in consultation with communities so that noisiest activities are restricted to being undertaken during periods that will result in least disturbance.
Dust affects nearby communities and/or smothers vegetation	Materials used shall be covered and secured properly during transportation to prevent scattering of soil, sand, materials, or generating dust. Keep stockpiles of aggregate materials covered to avoid suspension or dispersal of fine soil particles during windy days or disturbance from stray animals. Minimize dust from exposed work sites and stockpiles by applying water on the ground regularly. No burning of site clearance debris (trees, undergrowth) or construction waste materials. Immediately re-vegetate and/or stabilize exposed areas (if required).

Risks and Impacts	Mitigation Measures
Soil erosion and uncontrolled sediment release causing negative impacts to surface waters, including the marine environment (and sensitive marine habitat).	Implement suitable project design (e.g., establish appropriate erosion and sediment control measures) to minimize soil erosion and identify and protect receiving water courses and bodies, including marine water. Schedule works to avoid heavy rainfall periods. Minimise cleared areas. Avoid clearing sloped areas where practicable. Stabilize exposed areas promptly. Prevent sediment laden water entering sensitive marine areas.
Resource efficiency issues, including materials supply and extraction of raw materials.	Estimate the quantities of raw materials needed for the minor civil works. Source raw materials from licenced/permitted facilities only. Use recycled or renewable building materials (e.g. timber) where possible.
Damage to cultural heritage.	Have a Chance-Finds Procedure in place prior to any physical works beginning. Chance Finds Procedure is available as Appendix 2 of the Project ESMP.
Disturbance of UXO results in OHS and community safety risks	Have a Chance-Finds Procedure in place prior to any physical works beginning. Chance Finds Procedure is available as Appendix 2 of the Project ESMP.
Land and/or water pollution from waste (solid, hazardous, and wastewater)	Prepare a site-specific Waste Management Plan that lists the types of waste to be produced, storage and handling requirements and final disposal method for each waste type. The Waste Management Plan to include the principles of the Waste Hierarchy (Reduce, Reuse, Recycle, Residual Disposal). Use litter bins, containers and waste collection facilities at all places during works. Dispose of waste only at designated place and in manner identified and approved by local authority. Note that facilities to manage waste in Tuvlau are minimal and some waste may need to be transported to Funafuti for management. Provide adequate portable sanitation facilities serving all workers at all construction sites. Ensure onsite worker sanitation facilities be properly operated and maintained to collect and dispose of wastewater. Minimize hazardous waste generation by ensuring hazardous waste is not co-mingled with non-hazardous waste. Provide training to staff in the segregation of wastes.
Land and/or water pollution from use and storage of hazardous substances e.g. minor spills from fuel, oils, lubricants.	Use impervious surfaces for refuelling areas and other fluid transfer areas. Ensure that refuelling and maintenance facilities are not located as far as practicable from watercourse and ecologically sensitive areas. Provide adequate secondary containment for fuel storage tanks and for the temporary storage of other fluids such as lubricating oils and hydraulic fluids. If the secondary containment used is bunding, then the area should also be lined and covered.

Risks and Impacts	Mitigation Measures
	Regularly check for leaking oil or fuel from machinery. Any leaks are promptly repaired and/or parts replaced. Train workers on the correct transfer and handling of fuels and chemicals and the response to spills. Provide spill kits on-site that are appropriate to the type and scale of hazardous materials being used.
Loss of vegetation cover / trees	Minimise area to be cleared – only remove vegetation in areas specified in the design. Store topsoil from reinstatement at the end of construction. Restore vegetation cover at the end of construction.
Occupational Health and Safety (OHS) risks for workers	Develop and follow a site-specific health and safety (H&S) management plan that is compliant with the ESMF and World Bank Environment and Health and Safety Guidelines (EHSGs). H&S management plan(s) must be submitted to the PMU E&S Officer for approval prior to any physical works commencing. Complete different levels of risk assessment, i.e. from whole Job Safety Analysis down to the personal level, to identify any potential hazards, rank the risks, and identify ways to eliminate, control or minimize the hazards. Appoint a health and safety officer at site, who will have the authority to issue directives for the purpose of maintaining the health and safety of all personnel authorized to enter and or work on the site. Prepare and implement a simple action plan to cope with risk and emergency (e.g., fire, storm surge, cyclone, COVID-19 outbreak). Workers shall have appropriate PPE. Workers shall have appropriate on OHS, use of PPE and use of equipment. Take protective measures to prevent accidents such as: o implementing good house-keeping practices, such as the sorting and placing loose construction materials in established areas away from foot paths. o locating electrical cords and ropes in common areas and marked corridors. o planning and segregating the location of vehicle / machinery traffic o ensuring moving equipment is outfitted with audible back-up alarms. Provide project workers with accessible means to raise workplace concerns (refer to Project LMP).
Health and safety risks for community from construction works	Take protective measures to prevent accidents such as: o barriers to prevent unauthorised access to worksites. o implementing good house-keeping practices, such as the sorting and placing loose construction materials in established areas away from foot paths. o locating electrical cords and ropes in common areas and marked corridors.

Risks and Impacts	Mitigation Measures
	○ planning and segregating the location of vehicle / machinery traffic ○ ensuring moving equipment is outfitted with audible back-up alarms. Communicate risks and community safety mitigation measures to project stakeholders and communities. Project GRM developed and operational in accordance with the Project SEP.
Increase in sexual exploitation and abuse/ harassment (SEA/H) related to project workforce	SEA/H requirements to be included in the site-specific H&S management plan including aspects relating to preventing GBV and SEA/H and zero tolerance for these behaviours. Workers to be well briefed on the GBV and SEA/H requirements in the H&S management plan. Provide separate bathroom facilities for female and male workers. Refer to the Project LMP for further mitigation measures.
Workers are underaged.	Child labour or forced labour is absolutely prohibited in the project.

Appendix 2: Chance Finds Procedure – Cultural Heritage and UXO

When a person working on the project discovers a cultural heritage site or item, or any item of unexploded ordinance (UXO) the following procedures should be followed.

1. Stop the activities in the area of the chance find.
2. Delineate the discovered site or area (e.g., fencing).
3. Secure the site to prevent any further disturbance, damage or loss.
4. Notify PMU and TFD.
5. Prohibit the collection of objects by any person.
6. For chance find of cultural heritage item:
    a. In cases of human remains, arrange for a guard to watch the site until the police, local government and / or person with delegated authority takes over.
    b. Notify the relevant Kaupule and Department of Culture within 24 hours (and police if it is human remains).
    c. Any objects that are found must be handed over to the relevant Kaupule or Department of Culture.
    d. Project works can resume only after instruction is provided from the relevant Kaupule and Department of Culture.
7. For chance find of UXO:
    a. Notify the relevant Kaupule, Tuvalu Police Force and TFD as soon as possible.
    b. Follow instructions from Tuvalu Police Force relating to disposal of UXO.
    c. Project works can resume only after instruction is provided from the Tuvalu Police Force and TFD.

Appendix 3: Terms of Reference for C-ESMP for Watchtower

Preamble

This indicative Terms of Reference (ToR) has been prepared to support the Tuvalu: Pacific Islands Regional Oceanscape Program – Second Phase for Economic Resilience Project (TV PROPER; the "Project"). The Project is being implemented by the Tuvalu Fisheries Department (TFD). Subcomponent 3.1c of the Project includes a subproject relating to the design and construction of a watchtower.

Once further details of the proposed watchtower are known, this ToR should be reviewed and revised (if required), with a final ToR produced.

Terms of Reference

The ToR is for the construction environmental and social management plan (C-ESMP) that needs to be prepared to assess the environmental and social impacts and risks associated with the proposed subproject, and specify the mitigations that will be implemented to reduce and manage them. This ToR relates to the assessment and 'no objection' required from the World Bank (WB) for this subproject. Additional assessment may be required if the subproject requires a Development Permit as per the Environmental Protection (Environmental Impact Assessment) Regulations 2012 and Environmental Protection (Environmental Impact Assessment) Amendment Regulations 2018.

A C-ESMP was prepared for an earlier version of the proposed subproject, however, this ESMP was not prepared to meet with current WB requirements as these have since changed. The previous ESMP will be made available to the Consultant.

The environment and social risks and impacts from the watchtower are expected to include:

- Erosion control and the runoff of suspended solids and pollutants resulting from earthworks, and the development of the exposed areas.
- Pollution and spills resulting from construction activities, including the storage of fuels and vehicle plant refuelling and handling of cement.
- Solid waste management.
- Construction noise management.
- Construction dust management.
- Fire management.
- Depending on the site selected, there will be additional site-specific risks and impacts.

The consultant shall prepare an ESMP that addresses the potential impacts associated with the proposed watchtower, which include, but are not limited to, those listed above. The ESMP will be prepared in alignment with the requirements of the World Bank Environmental and Social Framework (ESF) and relevant Environment and Social Standards (ESSs).

A suggested outline for the C-ESMP is:

Executive Summary

Introduction

Include objectives of the C-ESMP.

Project Description

- Project location, including maps, photos and drawings.
- Descriptions of communities in the vicinity of the subproject.
- Detailed description of subproject, including how it will be constructed.
- Details of material and labour requirements.
- Details of aggregate requirements and where these will be sourced.

Legal and Other Requirements

Overview of WB requirements, Tuvalu regulations and any TFD internal procedures that apply to the subproject.

Environmental and Social Setting

Description of the biophysical and social environment of the proposed project, including any potentially sensitive habitat with reference to ESS6.

Stakeholder Consultation

Details of any planned stakeholder consultation as part of the scope. For example, keeping community informed of construction schedule, community health and safety, grievance redress mechanism, potential job opportunities for local people, etc.

Waste Management

- Inventory of waste types likely to be generated and how they will be managed, including any specific storage and handling requirements.
- Waste should be managed according to the following hierarchy:
- Avoid – avoid generation of waste (e.g., purchase products with no packaging materials)
- Reduce – reduce generation of waste (e.g., purchase product in bulk to reduce packaging materials)
- Reuse – reuse waste products (e.g., reuse packaging materials)
- Recycle – recycle waste products (e.g., recycle packaging materials)

Occupational Health and Safety

A completed risk assessment that identifies the occupational risks/hazards associated with the scope and explains how these will be managed. The mitigations may refer to existing TFD OHS systems (if adequate) and these can be appended to the C-ESMP.

Community Health and Safety

A completed risk assessment that identifies the community health and safety risk associated with the scope and explains how these will be managed.

Potential Impacts and Mitigation Measures

Table listing the potential environment and social impacts of the subproject and how they are proposed to be mitigated. These may come from the previous C-ESMP and/or the ESCoP (Appendix 1 of the ESMF). Table to reference or include cultural heritage chance find procedures.

Risks and Impacts	Mitigation Measures	Responsibilities	Timing	Monitoring

Inspections and Monitoring

This section lists the inspections and monitoring to be undertaken, responsibilities for undertaking the inspection/monitoring and how they will be recorded. This would include, but not be limited to, daily site walk-arounds, weekly site inspections, checks for spills, etc.

Training

This section lists the training to be undertaken, responsibilities for undertaking the training and how it will be recorded. This would include, but not be limited to, site inductions, toolbox talks, job/task-specific training, first-aid training, GBV/SEAH awareness training, etc.

Emergency Response and Incident Management

This section will include the process to follow in the event of various types of incidents (e.g., fire, large spill, injury, vessel incident, etc). It will include:

- Requirements for first aid kits, spill kits, etc.
- Contact details for medical and other emergency assistance.
- Initial notification requirements.
- Investigation and reporting requirements.

Grievance Redress Mechanism

Details of the Worker Grievance Redress Mechanism (GRM) (that aligns with the requirements in the Labour Management Procedure) and overall Project GRM.

Responsibilities

Details of responsibilities for implementing the C-ESMP.

Appendix 4: Funafuti Conservation Area

Subcomponent 3.1c of TV PROPER will involve the implementation of natural resource management plans (i.e., marine protected areas for coastal fisheries) and may result in the loss of access to natural resources that support subsistence and customary livelihoods, and local food and income security. Such impacts would typically trigger ESS5, however, the impacts on vulnerable people are proportionate to the benefits that they will receive through better managed fisheries. Thus, there are not differentiated impacts. The Funafuti Kaupule went through a comprehensive consultation process to establish the Funafuti Conservation Area, and this included consultation with women, young people, and vulnerable people and their views were considered were considered in the consultations and deliberations undertaken by/within the Falekaupule. The scope of ESS5 does not apply where restrictions of access to natural resources under community-based natural resource management projects, i.e., where the community using the resources collectively decides to restrict access to these resources, provided that the community decision-making process is adequate and reflects voluntary, informed consensus; and that appropriate measures have been agreed and put in place to mitigate adverse impacts, if any, on the vulnerable members of the community.

The process that the Funafuti Kaupule went through in deciding to establish the Funafuti Conservation Area (FCA) included community awareness-building as part of planning for the establishment of the FCA included showing a series of informational videos to about 275 community members, and re-enforcing these messages through follow-up meetings, discussions, and workshops, as well as publicity through local radio and newspapers.[17]

A study undertaken in 2003 by James T. Berdach Consulting Services investigated the performance of the FCA and investigated the community's views on the FCA. This was done through meetings, interviews, and distribution of questionnaires involving conservation managers, fishers, government representatives, NGO participants and community members. The results of the study were largely positive about the FCA, and the questionnaire survey with community members showed that…..[23]

- ***Awareness:*** *Almost all the respondents stated that they were aware of the FCA project. Awareness-building activities under the project helped to improve their understanding of the importance of coral reefs. One hundred percent of respondents correctly understood the conservation purpose of the FCA, and supported the concept.*
- ***Community-Based Planning and Management:*** *The majority of respondents felt that the FCA project had been conducted with a high level of community participation, and felt that the management of the FCA needed to be undertaken largely by the community itself. Nearly all stated that they are either interested in finding out more about the FCA, or becoming more involved through volunteer activities.*
- ***Enforcement:*** *All respondents thought that it was important to enforce the FCA as a no-take zone. About half felt that fines should be assessed against violators. The other half felt that violators should be given further awareness training and then perform conservation-related community service. None of the respondents supported the idea that violators should be treated with leniency, or that restrictions should be relaxed.*
- ***Management Issues:*** *Several questions were posed regarding the possibility of opening the FCA to periodic fishing. Some respondents declined to choose on of the multiple-choice answers offered, and instead wrote in that they disagreed that the FCA should ever be opened to fishing.*
- ***Revenue generation:*** *Most respondents felt that there was a possibility to generate revenues through sustainable, managed use of the FCA, for example, for ecotourism.*

[17] James T. Berdach Consulting Services. 2003. Case Study: The Funafuti Conservation Area, Funafuti Atoll, Tuvalu. Prepared as part of an Asian Development Bank study.

- ***Tangible Benefits:*** *Nearly all respondents felt that there were tangible increases in the numbers of fishes, birds, and turtles since the establishment of the protected area.*

The questionnaire data (community respondents) from the study is provided below.

INFORMATION ABOUT RESPONDENT	
NAME (optional):	--
MALE OR FEMALE:	M: **15** / F: **10**
ISLAND OF ORIGIN:	Funafuti: **14** / Other: **11**
AGE:	up to 15: **7** / 16-25: **2** / 26-40: **8** / 41-60: **6** / 61-up: **2**
EDUCATION (grade level):	none or no answer: **7** / primary or secondary: **11** / college: **7**
OCCUPATION:	see description in text
ANNUAL SALARY OR INCOME:	mostly unanswered

QUESTIONS / STATEMENTS	**Responses**
Question #1:	
A. I have already heard about the Funafuti Conservation Area (the FCA).	23
B. This is the first time for me to hear about the FCA.	1
No answer	1
Question #2:	
A. As a result of the FCA project I became aware of the importance of coral reefs.	7
B. I already knew all about coral reefs before the FCA project.	4
C. I knew a little about coral reefs, but the FCA project helped improve my knowledge.	14
D. I don't think coral reefs are very important—corals are just rocks.	0
Question #3:	
A. The purpose of the FCA is to prevent fishermen from fishing.	0
B. The purpose of the FCA is to protect fishes and other creatures in the area, so that there will always be enough fish for people to catch in other parts of the lagoon.	25
C. I do not understand the purpose of the FCA.	0
Question #4:	
A. Since the FCA was established, it seems that the number of fish in Funafuti Lagoon has increased, the fish are bigger, and it is easier now to catch fish than it was before.	17
B. Because people are not allowed to fish inside the FCA, it is more difficult to catch fish now.	2
C. The number of fish is still the same, they ar e the same size, and it is just the same catching fish as it was before.	4
No answer	2
Question #5:	
A. As a result of the establishment of the FCA, it seems that the numbers of coconut crabs and birds on the islets are increasing.	17
B. I don't think there are more coconut crabs and birds now, than there were before the FCA.	6
No answer	2
Question #6:	
A. The FCA was set up with the full cooperation and support of the people of Funafuti.	21
B. Some people came to Tuvalu and told us that it would be a good idea to have a conservation area, so we just did what they told us to do.	2
No answer	2

QUESTIONS / STATEMENTS	Responses
Question #7:	
A. I agree that the FCA is a good idea. It is important to protect a part of the lagoon so that fish and other animals can breed and reproduce, so there will always be enough fish.	25
B. I do not agree that the FCA is a good idea. Fishermen of Fongafale should be allowed to fish wherever they want to in the lagoon. There will always be plenty of fish in the lagoon, so it is not fair to stop them from fishing.	0
Question #8:	
A. The FCA should be managed by scientists who understand the best way to do it.	2
B. The FCA should be managed by local people. If they need assistance in managing the FCA, some advisers can also be asked to help.	23
Question #9:	
A. I would like to find out more about the FCA.	10
B. I would be willing to help to work on the management of the FCA as a community volunteer.	14
C. I am not interested in the FCA.	0
No answer	1
Question #10:	
A. If fishermen agree not to go into the FCA, and then they are caught going into the FCA to catch fish, then they should pay a fine or go to jail.	11
B. Fishermen should not be harshly punished for violating rules about fishing in the FCA, because they are only trying to feed their families. The rules need to be changed.	0
C. Fishermen who violate the FCA regulations need to be better informed so that they understand why they should not fish inside the protected area. Therefore these fishermen should be given some lessons on conservation, and should then be required to do community service to help promote conservation.	14
Question #11:	
A. If there are plenty of fish in the FCA, fishermen should be willing to pay a fee to get a license, so that they can fish inside the conservation area.	20
B. Fishermen should be allowed to fish inside the conservation area for free, without a license, anytime they want to.	0
No answer / Disagree	5
Question #12:	
A. Fishermen should not be permitted to fish inside the conservation area under any circumstances .	12
B. If there are plenty of fish in the FCA, then fishermen should be permitted to fish at special times, so that they can fulfill their community obligations (for example, during feasts).	13
C. The FCA should be opened up for fishing at all times, with no limitations.	0
Question #13:	
A. If the FCA is opened for fishing on special occasions, it should be limited only to one fishing day every three to fie years. Each fisherman must agree to stop once he has caught a certain number of kilograms.	7
B. If the FCA is opened for fishing on special occasions, it should be limited to no more than one or two days per year. Each fisherman must agree to stop once he has caught a certain number of kilograms.	13
No answer	5
Question #14:	
A. The kaupule may be able to raise money in the conservation area by charging fees for fishing licenses and through the development of the tourism business	22
B. It will not be possible for the kaupule to raise money in the conservation area.	2
No answer	1