

# Digital Federated States of Micronesia Project

## Environmental and Social Management Plan

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Acronyms and Abbreviations

ADSL	Asymmetric Digital Subscriber Line
AGs	Attorney General
CESMP	Contractor Environmental & Social Management Plan
CERT	Cyber Security Emergency Response
CITES	<i>Convention on International Trade in Endangered Species of Wild Flora and Fauna</i>
CIU	Central Implementation Unit
COC	Code of Conduct
COP	Codes of Practices
CSDMP	Contaminated Soil Disposal Management Plan
DGP	Digital Government Platform
DGSF	Digital Government Strategic Framework
Digital FSM	Digital Federated States of Micronesia
DoFA	Department of Finance and Administration
DoTCI	Department of Transportation, Communication and Infrastructure
DSLAM	Digital Subscriber Line Access Multiplexer
DSL	Digital Subscriber Line
EDSCP	Erosion, Drainage and Sediment Control Management Plan
EHS	Environmental Health and Safety
EIA	Environmental Impact Statement
EIS	Environmental Impact Assessment
EPA	Environmental Protection Agency
ESCP	Environmental & Social Commitment Plan
ESF	Environmental & Social Framework
ESHS	Environment, Social, Health and Safety
ESIA	Environmental and Social Impact Assessment
ESIMS	Environmental & Social Impact Mitigation Strategies
ESMP	Environmental and Social Management Plan
ESS	Environmental & Social Standards
ESMS	Environmental & Social Management System

ESRC	Environmental & Social Risk Classification
FSM	Federated States of Micronesia
FSMTC	FSM Telecom
FSMTCC	Federated States of Micronesia Telecommunication Cable Corporation – also known as the OAE (Open Access Entity)
FTTH	Fiber To The Home
FTTN	Fiber To The Node
GBV	Gender Based Violence
GIIP	Good International Industry Practice
GM	Grievance Mechanism
IA	Implementing Agency
IAS	Invasive Alien Species
ICT	Information & Communication Technology
IDP	Infrastructure Development Plans
ISP	Internet Service Providers
IT	Information Technology
JSA	Job Safety Analyses
KIRMA	Kosrae Islands Resource Management Authority
KYC	Know Your Customer
LAP	Land Access Process
LMP	Labor Management Procedure/Plan
LTE	Long Term Evolution
LUA	Land Use Agreements
MOU	Memorandum of Understandings
NDID	National Digital Identifier
NOL	No Objection Letter
NPDES	National Pollutant Discharge Elimination System
OAE	Open Access Entity – legally known as the Federated States of Micronesia Telecommunication Cable Corporation –
OHS	Occupational Health and Safety
PEIS	Preliminary Environmental Impact Statement

PID	Project Information Document
PM	Particulate Matter
PMU	Project Management Unit
POM	Project Operations Manual
PPA	Project Preparation Advance
PPE	Personal protective Equipment
PPP	Public Private Partnership
RPF	Resettlement Policy Framework
SA	Safeguard Advisor
SDP	Sector Development Plans
SEP	Stakeholder Engagement Plan
SHDHL	Symmetrical High-Speed Digital Subscriber Line
SIDS	Small Island Developing States
SMP	Safety Management Plans
SOP	Standard Operating Procedures
TA	Technical Assistance
TBD	To be Determined
ToR	Terms of Reference
TRA	Telecommunication Regulatory Authority
TVPA	Victims of Trafficking and Violence Protection Act of 2000 – USA Law
µm	Microns
UXO	Unexploded Ordinance
WB	World Bank
WHO	World Health Organization
WMP	Waste Management Plan
WWF	World Wildlife Fund

Weights and Measures

m-		meter
m <sup>2</sup>	-	square meter
m <sup>3</sup>	-	cubic meter
mm	-	millimeter
Inch	-	= 25.4 mm
Mile		= 1.61 km

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## HOW TO USE THIS DOCUMENT

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This Environment and Social Management Plan (ESMP) is for the Digital Federated States of Micronesia Project (Digital FSM Project). It was prepared by Peter Wulf and Sonya Sampson for the Department of Transport, Communications and Infrastructure (DoTCI) and Federated States of Micronesia Telecommunication Cable Corporation (also known as the Open Access Entity).

The ESMP was developed as part of the preparatory documentation for the Digital FSM Project, to provide guidance for the FSM Implementing Agency (DoTCI) and the Central Implementation Unit (CIU) on environmental and social safeguard aspects of the Digital FSM Project.

The ESMP sets out how the safeguards aspects of the Digital FSM Project will be applied during the identification, design and implementation of the activities funded by the Digital FSM Project.

The ESMP will also inform the development of the Project Operations Manuals (POM).

The ESMP applies to the entire Digital FSM Project.

## EXECUTIVE SUMMARY

The Government of the Federated States of Micronesia (FSM) is applying to the World Bank (WB) for grant financing to undertake the “Digital Federated States of Micronesia Project” (Digital FSM Project). The Digital FSM Project support investments in digital infrastructure in all four States as a catalyst to mobilize private sector investment and increase access to higher quality, lower cost digital services.

As part of the requirements of the submission to the World Bank, the Government of FSM is required to prepare environmental and social safeguards documentation as part of the Project Preparation Advance (PPA) stage. The Digital FSM Project has an Environmental and Social Risk Classification (ESRC) of moderate for both environmental and social risks as per the World Bank Environmental and Social Framework. To fulfill the requirements of the World Bank, the Government of FSM has prepared this Environmental and Social Management Plan (ESMP) in support of a Digital FSM Project proposal.

This ESMP provides the tools for the integration of environmental and social stewardship into the project as required by the FSM and State relevant laws and regulations and the World Bank Environmental and Social Framework. The ESMP is a necessary instrument for the FSM's preparation for the Digital FSM Project under World Bank Environmental and Social Framework.

### Project Objectives and Components

The Digital FSM Project has four (4) components as per the Project Information Documents (PID). The components include:

#### Component One: National Digital Connectivity Infrastructure

- a. Improving national data connectivity through the installation of high-speed domestic (terrestrial) fiber network around the main island in each of the four states with a target of passing 80% of premises and connecting as many homes and businesses as possible to the network with Fiber to the Home (FTTH) technology. The infrastructure will predominantly use existing poles to provide the infrastructure for above ground fiber services and where necessary, there will be micro-trenching to install the fiber cable below ground where above ground is not feasible. Any FTTH connection will be above ground;
- b. Bridging the connectivity gap for outer islands with the installation of microwave towers to provide 4G Long Term Evolution (LTE) technology and satellite connectivity to provide mobile internet. This technology will be constructed in atolls/islands with more than 100 people (42 islands) via a Public Private Partnership (PPP) mechanism;

#### Component Two: Digital Government Platform

- a. Development of an all of Government Digital Government Strategic Framework (DGSF) to improve Government business processes and workflow efficiencies increasing access to services, and enhancing the quality of life for citizens and residents, while reducing the complexity for businesses transacting with Government;
- b. National ID system to provide a unique legal identity to all citizens and residents of FSM and facilitate the authentication of that identity and electronic signature online. The objective of this voluntary process is to increase access to and enable the digitalization of public and private sector services;
- c. Secure Government Network and Data Center, Disaster Recovery/Business Continuity and Government Cloud (FSM-Cloud);
- d. Design and implementation of a National Government Portal to facilitate citizen and business access to public information; and
- e. Implementation of selected e-Services in key sectors (e.g. health, agriculture, urban, transport and education).

#### Component Three: Enabling environment for Digital Government and Digital Economy

- a. Creation of a legal and regulatory framework for Digital Government through the development of institutional and data governance arrangements, particularly around data security, data protection, authentication protocols and processes, privacy, transparency, non-discrimination, Netsafe principles and practices, and support for digital transactions;
- b. Creation and rollout of a Government's Cyber Security Program which will include the development of operational and administrative standards, assurance, monitoring, audit and Cyber-Security Emergency Response capabilities; and
- c. Telecommunications Regulatory Support, which will include assistance with respect to licensing, interconnection, wholesale access, spectrum issues, quality of service monitoring and enforcement, technical regulation, and leadership and advocacy issues.
- d. Strengthening of the Gender Division in the National Government to promote gender mainstreaming at the National and State level during the development and implementation of new policies and regulatory reforms for digital services and the development of the digital economy.

Component Four: Project Management

- a. Provide funding for the Project Management Unit within the DTCL and for the Central Implementation Unit for the management of this and other projects over four years.

Component One will be implemented by the Federated States of Micronesia Telecommunication Cable Corporation (FSMTCC), also known as the Open Access Entity (OAE); a not-for-profit Government entity that will allow access to all commercial operators that have been approved by the Telecommunications Regulatory Authority (TRA) to supply private and commercial internet and telephone services in FSM. The Open Access Entity owns and manages the current submarine cables in Chuuk, Pohnpei and Yap, and the East Micronesia Cable that will provide high speed internet to Kosrae from 2020-2021.

Project Benefits

Independent economic analysis of the proposed project indicated that “economically speaking, except for one scenario in Yap, all Fixed Broadband scenarios show positive economic impacts and the Mobile Broadband scenario shows high positive results for all FSM islands.”

Stakeholder consultations have indicated overwhelming support for the Digital FSM project, with perceived level of benefits to be extremely high. Expected benefits of the project include improved access to information, social connections to family and friends in other locations, improved access to educational resources, banking services, opportunities for increased economic participation, access to government eServices (including the health system), increased use of internet for meetings instead of requiring physical travel, and many more. Remittances are a major source of revenue for families in FSM, and internet connectivity will make these vastly easier to access. Online purchasing has also been identified as a major benefit to individuals and businesses.

Increased internet connectivity through the Digital FSM project will undoubtedly be beneficial for the people of FSM. However, increased access will also introduce some risks, as is experienced globally.

FSM and State Legislation

The Digital FSM Project will need to comply with both National and State Laws including relevant environmental, social and labor laws.

Any earthworks (only micro-trenching anticipated) associated with any construction activities undertaken in relation to Component One of the Digital FSM Project would be minor and are within already disturbed environments. Notwithstanding, the works will require State approval and a permit for minor earthworks. There is the potential for small scale construction works associated with the towers on outer islands. A number of annexures to this ESMP are relevant for these activities.

There is very limited legislation related to social matters. These are covered more broadly within

All workers engaged on the Digital FSM Project will need to be covered under the terms of the WB Environmental Health and Safety (EHS) Guidelines, which means development of comprehensive Job Safety Analyses (JSAs) for each role, including potential contractors involved in building works. This process will involve development of Safety Management Plans (SMP) for each position. Workers will also need to comply with the Code of Conduct established under this ESMP.

World Bank Environmental and Social Framework

The key Environmental and Social Standards (ESS) under the World Bank Environmental and Social Framework (ESF) that are *relevant* to this project and require specific instruments to be prepared are:

- f. ESS1 – Assessment and Management of Environmental and Social Risks and Impacts;
- g. ESS2 – Labor and Working Conditions;
- h. ESS3 – Resource Efficiency and Pollution Prevention and Management;
- i. ESS4 – Community Health and Safety;
- j. ESS5 – Land Acquisition, Restrictions on Land Use and Involuntary Resettlement;
- k. ESS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- l. ESS8 – Cultural Heritage; and
- m. ESS10 – Stakeholder Engagement and Information Disclosure.

The following ESS are *not relevant* to the Project:

- n. ESS7 – Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities; and



- o. ESS9 – Financial Intermediaries.

As a result of this assessment, the Government of FSM is required to prepare the following instruments in accordance with the World Bank's Environmental and Social Framework:

- p. Environmental and Social Management Plan (ESMP) – *this document*
- q. Environmental and Social Commitment Plan (ESCP) (prepared by FSM & World Bank Safeguard team);
- r. Labor Management Procedure (LMP) (Chapter Eight (8) of this document); and
- s. Stakeholder Engagement Plan (SEP) – a standalone document.

#### Significant and Potential Environmental and Social Impacts and Mitigation Measures

The environmental risks are considered minor and relate primarily to managing micro-trenching and waste during infrastructure installation and maintenance. The risks to the community and workers during installation and maintenance relate to health and safety disruptions and access to properties and businesses. These types of risks can be managed through effective codes of practice for the installation of infrastructure, training of workers and good supervision and oversight of mitigation measures.

In locations where there is a need for towers to be built (for microwave or satellite connectivity) with associated power supply (such as solar panels and batteries), there may be impacts in terms of minor vegetation clearing. There may also need to be vegetation clearing around existing poles and where fiber will be strung. There is also the potential for vegetation clearing for micro-trenching. These impacts will be spatially restricted and therefore minor. There are also potential impacts associated with the use of vessels working within the islands and the potential for these vessels to run aground, albeit, this impact is likely to be rare.

The Digital FSM Project will touch almost every citizen living in FSM in different ways. Social risks of the physical infrastructure component relate primarily to land, influx of construction workers (albeit small numbers – approximately ten foreign workers with local workers) within communities, community and worker health and safety during construction, public perceptions of FSM Telecom and the FSMTC (OAE) and risks associated with internet usage.

The backbone fiber optic cable will follow existing easements for primary and secondary roads. However, there are some exceptions, including:

- t. **Kosrae** - a section of coastal road is proposed to be relocated to higher ground (inland) and the new alignment may not yet have easements in place. There is a future proposed "cross-island" road, which may need future fiber cable connectivity. The remote community of Walung on the northwestern side of the island is likely to be connected via microwave link and then fiber only within the village area, however the gravel access road may need to be improved (e.g. graded and compacted) to enable access for construction equipment and materials. Permissions would need to be negotiated for the fiber to be laid.
- u. **Chuuk** - within Chuuk Lagoon it is proposed to install fiber cables on five lagoonal islands, including Weno, Tonoas, Udot, Fefan and Uman islands. Only Weno and Tonoas have existing roads and easements in place, and land permissions for the other three islands will need to be established. Further, new base stations (microwave) are proposed for the Faichuk Island group (in three locations), Parem and Uman islands, which will require land permission and potentially ongoing leases for small land parcels for the towers and associated power supply. Long Term Evolution (LTE) capacity is also proposed to be added to sites with existing Telecom towers on Weno, Udot, Romanum, Takuro, Fred, Netutu and Polle Islands, which will require negotiations with Telecom and potential lease arrangements.<sup>2</sup>
- v. **Yap** - Rumung Island (one of the four islands of "Yap Proper") has no formal road, easements or power supply currently. Due to the population size and the prohibitive cost of shallow marine cable, it is likely that a microwave link would be preferable for this community. This will require some land to be negotiated on both sides of the channel.
- w. **Pohnpei** – none that were identified during consultations.
- x. **Outer Atolls and Islands** – Depending on the topography of each atoll, satellite technology may be attached to existing structures with power supplies (such as a school, dispensary, cell tower, or other existing public building). However, in some cases towers may need to be constructed in order to distribute the connection across a wider area (e.g. multiple islands in an atoll). In this case, there may be a requirement for some land to be leased. The preference would be to site these wherever possible within the footprint of existing government building lease areas.

The project may provide Fiber To The Home (FTTH), which would be a significant social benefit as it increases the likelihood of access by the poorest households and is the most cost and time effective way forward. FTTH would involve connecting the fiber to each individual private property (homes and businesses) where it is technically feasible and economically viable to do so. There are existing

easements for utilities in Chuuk and Kosrae states that allow utilities to access private land for the purposes of provision of public services, which includes the FSMTCC (OAE), one of the implementing agencies for the project.

If the proposed design of FTTH proceeds, a process for households and businesses to request connections would be needed for provision of services beyond the existing easements for primary and secondary roads, and to be installed onto private land. There are legal provisions and easements in place currently that allow utilities access to private land for the purposes of public service provision in all states.

Depending on the final design, the ownership and responsibility for the “last mile” of the fiber (to the home or premises) needs to be considered. For example, if the services to households are broken, for example due to a natural disaster, the party responsible for repairs needs to be clearly identified and ensure that vulnerable households are not disadvantaged or excluded from service provision.

For outer atolls, there is a risk of assets not being maintained or long lag times in any needed repairs if the systems fail. This could be addressed through training locals in each site on basic maintenance, repairs and trouble shooting. The FSMTCC (OAE) business plan needs to demonstrate the viability of supporting ongoing maintenance to assets in these remote locations, to ensure it is financially viable to do so and that the investment will deliver the anticipated benefits to those communities.

With respect to the Digital Government Platform (DGP), in order to deliver government eservices and a portal as proposed under Component 2 of the project, a National ID system has been proposed to provide a unique legal identity to all citizens and residents of FSM and facilitate the authentication of that identity and electronic signature online.

This component carries a number of significant social risks, in terms of the potential use and security of this data by the FSM government or other parties (commercial, foreign governments, criminal, etc.). If this component of the project proceeds, significant preparation would need to be undertaken to articulate the potential benefits, use, security and privacy of this system and data. Significant stakeholder engagement, as outlined in the SEP, would be required to ensure that the community have broad and deep understanding of this proposed system, ramifications and protections, their ability to opt/in or out of the system, and potential benefits, risks and types of data to be linked to it.

Stakeholder engagement would also be required regarding each proposed government eService under Component 2 and in developing the proposed strategic framework, including with the relevant State and National Departments to understand existing related activities. Consultation on gender mainstreaming is also needed.

There are a number of social and financial risks arising from internet access. Notably, these risks already exist in FSM, given fairly widespread access to the internet (some of the time). This project will increase the speed, reliability, availability of the internet, reduce costs of internet services and would be expected to have a minor increase in the number of internet users. FSM citizens may be particularly appealing targets for online scams, fraud and identity theft due to their rights to work, live and study in the USA as a result of the Compact of Free Association between the USA and FSM.

There are also risks relating to unequal access based on gender, age or ability. Domestic violence may be an issue, with women's groups reporting awareness of one or more instances of men denying their wives access to phones/internet over concern of affairs or neglecting domestic and childcare duties. Conversely the internet will enable more information on domestic violence prevention, rights and access to emergency support. Costs of accessing internet services may be prohibitive, particularly on outer islands with very limited formal economies, and other poorer communities. If the costs of the “last mile” fiber connection to each house is borne by the household (rather than financed under the project), the risk of lower income households being excluded would increase. The regulator will need to play a key role in ensuring that low income households, outer island and remote communities, people living with disabilities, the elderly and other vulnerable groups are able to access affordable services based on market assessment, with free or highly subsidized service provision a potential need. Project Component 3C provides Technical Assistance to the Regulator, and will include considerations of regulation, access and advocacy issues. This component will be key to mitigating the risk that the investment in connectivity to some locations may not deliver the intended social benefits and drive increased inequality.

Appropriate and relevant avoidance and mitigation options have been proposed in the ESMP, which if put in place, will significantly reduce the potential impacts of the Digital FSM to an acceptable level. An Erosion, Drainage and Sediment Control Management Plan (EDSCMP) and Contaminated Soil Disposal Management Plan (CSDMP) have been developed along with Waste Management, Plans (WMP). More importantly, the Digital FSM will have significant environmental and social benefits that will be achieved more generally.

### Consultation

The ESMP sets out protocols for stakeholder engagement and grievance redress. An important feature of the Digital FSM Project is that it is based around an adaptive management approach and therefore explicit feedback and review measures have been incorporated in the stakeholder engagement/grievance redress procedures.

The Digital FSM Project has developed a Grievance Redress Mechanism to deal with any complaints and issues that may arise as a result of the Digital FSM Project. The Grievance Redress Mechanism is consistent with FSM and World Bank Environmental and Social Framework.

From the consultations undertaken, the key issues include:

- y. **Land** – in all locations where there will be construction outside existing public land or easements for utilities, there will need to be extensive consultations and agreement with communities and individual landowners. This will be particularly important for Chuuk's lagoonal islands, Yap's Rumung island, and the Walung community in Kosrae. Microwave towers require line of sight and has an infrastructure footprint on both sides. In all cases, existing government leased land will be prioritized, but in some locations, there may also be negotiations, Land Use Agreements (LUA), requests for services or permissions put in place.
- z. **Construction Works** – communication regarding when, where and duration of construction works in each location will be important, including any temporary access restriction during works, as well as information on community awareness of issues and impacts of transient construction workers, particularly when working near private houses or remote or isolated communities. Community awareness raising on issues such as the recently changed age of consent (Chuuk state) would also be beneficial, and given the cultural and historical context, what is acceptable in terms of access of minors to workers would also be important to engage with stakeholders on to reduce the incidence of guardians who are selling minors for sex with workers.
- aa. **Competition in the Telecommunications Sector** – across all four states of FSM during consultations, concern was raised with FSM Telecommunication Corporation (FSM Telecom for short). There was a lot of interest in increased competition in the telecommunications retail sector, as well as the role of FSMTCC (OAE). People expressed concern with regards to the price of phone and internet services, to businesses and individuals, and were also concerned about ongoing costs of maintenance being passed through to consumers. Further engagement is needed to understand the basis of the concerns, and to understand the role of the Telecommunications Regulatory Authority (TRA) and FSMTCC (OAE) in addressing any issues and communicating to communities and key stakeholders.
- bb. **Internet Use** – public awareness raising is key to ensure that citizens who may be exposed to the internet for the first time, or have much improved service, are aware of risks such as online scams, fraud, identity theft, viruses, hacking, spyware and malware and what they can do to identify potential risks and protect themselves. Programs targeting parents to understand risks to children, such as content that may be explicit or violent, as well as people who may target children for grooming or other risks, would be beneficial to be included under the program also. Youth and cyber-bullying could also be targeted through campaigns under this program.
- cc. **Legislation** – where there are changes to legislation under the program, such as introducing laws regarding posting content without consent (e.g. revenge pornography), it will be important that the legislation is socialized, and stakeholders are aware of the changes and implications of the law.

#### Institutional Arrangements for Safeguards Implementation

The Department of Transport, Communication and Infrastructure (DoTCI) will be responsible for the ESMP and integrating the requirements into the Program. DoTCI will have responsibility for the day-to-day implementation of all safeguard requirements with support from FSMTCC (OAE) and DoFA for Component One.

For the Digital FSM Project, a Safeguard Team, consisting of a National Safeguards coordinator and International Advisor (SA) will be attached to the Central Implementation Unit (CIU) within DoFA and work will with DoTCI to ensure the effective implementation of the Project ESMP. For Component One, the DoFA CIU Safeguards team will work with the FSMTCC (OAE) on undertaking and managing the works. The Owner's Engineer for Component One will also engage a Safeguards Officer to oversee the works under that component.

#### ESMP Capacity Building and Budget

The Government of FSM has carried out stakeholder and community consultations during the preparation of the ESMP in compliance with both FSM legislation and the World Bank Environmental and Social Framework (ESF). The ESMP has been prepared based on both FSM laws and the World Bank ESF to manage the residual environmental and social impacts from the project. The implementing agencies (DoTCI, FSMTCC etc) involved do not have specific safeguard policy experience (DoTCI have some World Bank experience). DoTCI who will deliver the Digital FSM Project will include international and local staff dedicated to environmental, social and behavior change and advocacy who will have the capacity and capability to implement the consultations and social mitigation measures from the ESMP.

The ESMP provides an indicative budget for implementing the elements of this ESMP, based on best estimates with assumptions of the kind of activities likely to be undertaken in the Digital FSM Project.

Budgeting for environmental and social interventions and the application of mitigation measures to enhance positive impacts for FSM is an investment in the future as it will reduce the environmental and social liability at local, and national levels. Overall, the Digital FSM Project will provide significant environmental and social benefits to people and their communities throughout the islands of the FSM.

# 1 INTRODUCTION

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1. The Government of the Federated States of Micronesia (FSM) is applying to the World Bank (WB) for grant financing to undertake the “*Digital Federated States of Micronesia Project*” (Digital FSM Project). The Digital FSM Project support investments in digital infrastructure in all four States as a catalyst to mobilize private sector investment and increase access to higher quality, lower cost digital services.
2. As part of the requirements of the submission to the World Bank, the Government of FSM is required to prepare environmental and social safeguards documentation as part of the Project Preparation Advance (PPA) stage. The Digital FSM Project has an Environmental and Social Risk Classification (ESRC) of *moderate* for both environmental and social risks as per the World Bank Environmental and Social Framework (ESF). To fulfill the requirements of the World Bank, the Government of FSM has prepared this Environmental and Social Management Plan (ESMP) in support of a Digital FSM Project proposal.

## 1.1. PURPOSE AND SCOPE OF THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

3. The World Bank is supporting the Government of FSM to deliver the Digital FSM Project. This ESMP provides for the integration of environmental and social stewardship into the project as required by the World Bank Environmental and Social Framework (ESF).
4. An ESMP is a management tool used to assist in minimizing the impact to the environment and community. To ensure the environmental and social objectives of the Digital FSM Project are met, the ESMP will be used by the project Implementing Agencies (DoTCI, FSMTCC etc.) to structure and control the environmental and social risks and impacts.
5. The ESMP sets out the principles, rules, guidelines and procedures to manage the environmental and social impacts. It contains measures and plans to reduce, mitigate and/or offset adverse impacts and enhance positive impacts, provisions for estimating and budgeting the costs of such measures, and information on the agencies responsible for addressing project impacts.
6. The ESMP sets out the following:
  - a. Brief details on the project description and sub-project typologies;
  - b. Provisions to address all of the applicable environmental and social standards during project implementation, including labor management procedures;
  - c. Description of the implementation arrangements;
  - d. The Grievance Mechanism (GM); and
  - e. Indicative budget for key ESF related activities.
7. A separate Stakeholder Engagement Plan (SEP) has been prepared for the project.
8. The ESMP also includes a range of annexures that provide frameworks, guidelines and plans for the management of specific matters such as an Erosion, Drainage and Sediment Control Plan (EDSCP), chance finds, and also contractual clauses that will be relevant especially when undertaking activities under Component One.
9. The ESMP will be updated from time to time by DoTCI and the contractors in consultation with the Project’s Safeguards Advisory team (SA) to incorporate changes in the detailed design phase of the Digital FSM Project.

## 2 BACKGROUND AND RATIONALE

### 2.1. COUNTRY CONTEXT

10. The FSM is located near the equator about 4,000 km southwest of the Hawaiian Islands in the Western Pacific Ocean and within the Caroline Islands group. The largest nation in the Micronesian sub-region, the FSM, is made up of four semi-autonomous states (Chuuk, Kosrae, Pohnpei, and Yap) located between Palau and the Philippines to the west and the Marshall Islands to the east.
11. The FSM is made up of 607 islands scattered over an area of about 2.6 million km<sup>2</sup>, including its Exclusive Economic Zone, in the western Pacific Ocean (Figure 1).

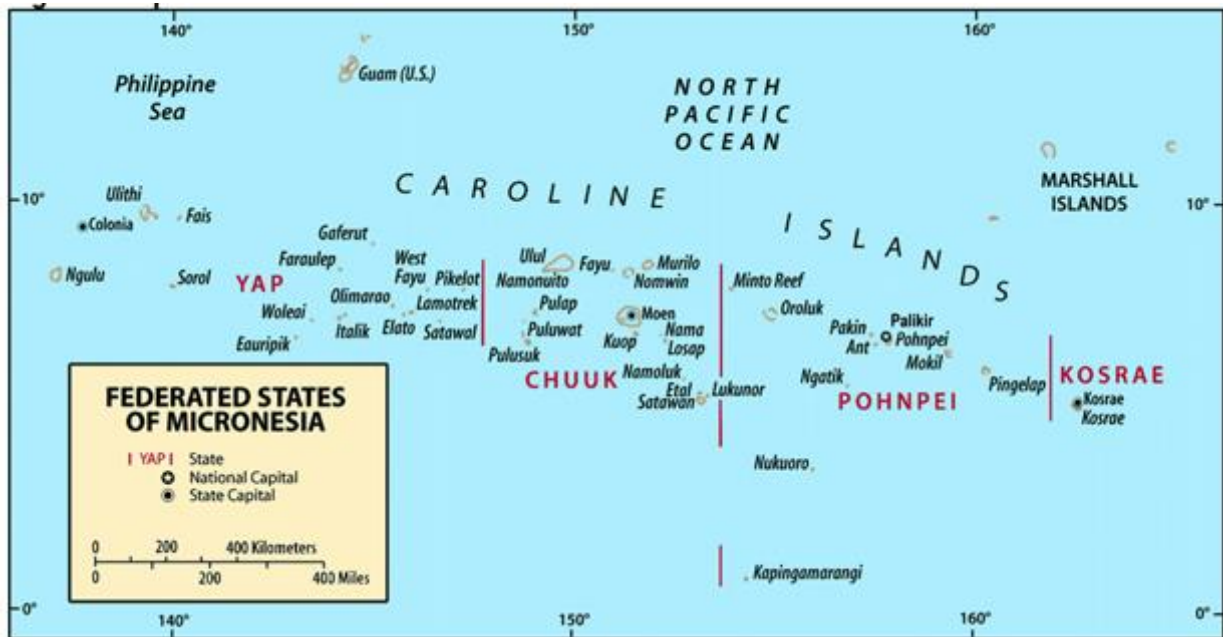


Figure 1 Map of the Federated States of Micronesia

12. The total land area of FSM is 704.6 km<sup>2</sup>, with 7,192 km<sup>2</sup> of lagoon area. The islands vary from small islets, which are inundated at high tide, to atolls and large volcanic islands with land area of more than 80 km<sup>2</sup>. Approximately 65 of the islands are inhabited.
13. As with other Small Island Developing States (SIDS) in the region, FSM faces significant challenges related to its small size, remoteness, geographical dispersion, environmental fragility and exposure to external shocks. Frequent natural disasters and climate change impose high costs and may even threaten the physical viability of some areas of both the main islands and more remote outer islands. Such events can and do cause severe damage to infrastructure and other economic assets and have adverse impacts on livelihoods. As such, having a reliable fiber and telecommunications network more broadly is vital for the population's safety.
14. While Chuuk, Pohnpei and Yap have undersea fiber cables connected to land (Kosrae will be linked with the East Micronesia Cable Project in late 2020), internet is predominantly provided via satellite technology which is extremely costly.

### 3 EXISTING INFRASTRUCTURE

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16. The Digital FSM will undertake activities across all four states on both the main islands and outer islands. In the four main islands, broadband infrastructures have already been implemented for both fixed and mobile connection through satellite technology as well as submarine cables.
17. In Chuuk, off-island connectivity is made possible via the submarine cable from Pohnpei-Chuuk. On Weno, fixed line connectivity is through an existing above ground copper network, which has previously been damaged by a number of typhoons. FSM Telecommunication Corporation (FSM Telecom or FSMTC for short) has in recent times, installed an above ground fiber cable; however, the cable is currently not connected to the submarine cable network. The connectivity to other islands in Chuuk Lagoon is based on microwave links; however, the connection and service remains very limited. Mobile infrastructure is made of 14 cell towers. There are current six (6) towers on Weno that are connected via copper with an additional tower on Weno that is connected via microwave. There are seven (7) towers on other islands in Chuuk Lagoon that are connected via microwave. Five of the cell towers have 3G capability and these cover the majority of Weno's population.
18. In Kosrae, off-island connectivity is made possible via a satellite link. The current speeds are lower compared to the other states. On Kosrae, fixed line connectivity is done through two outside plants: one copper plant (underground) and one cable TV plant (aerial). The two services cover only the northern and eastern parts of Kosrae. Kosrae also owns a utility pole infrastructure that could support future Fiber To The Home (FTTH) roll-out and this is discussed in Chapter 4. Cell towers provide 2G and 3G coverage to the main centre and the main road but not the entire island nor the alternative roads.
19. Pohnpei has a fiber-optic ring around the main centre of Kolonia . Mobile infrastructures are made of 17 cell towers. 4G is available in Kolonia. However, there are many black spots that remain and 3G mobile broadband covers only about 40% of the main road. Off the main island connectivity is made possible via submarine fiber cable Hantru-1, although this is limited in coverage to locations in close proximity to Pohnpei itself.
20. In Yap, fixed line connectivity network is made of copper and fiber optic cable. Broadband is accessible up to 4.5 miles from the central office. Mobile infrastructures are made of eight cell sites, including three cell sites that support 3G, but some black spots remain in the coverage.
21. Chuuk, Pohnpei and Yap all have installed submarine cables that are cable of supplying 100 gigabyte/second once activated fully. Kosrae will be linked to the East Micronesia Cable once installed with similar speeds.
22. On the outer islands across the four states (except Kosrae which does not have outer islands), there is essentially no existing fixed line infrastructure. Likewise, there is almost no mobile infrastructure except for Ulithi. Some cell towers in the Mortlock Islands Group of Chuuk State provide some connectivity; however, the infrastructure is often unreliable and lacks maintenance, especially when damaged by storm events.
23. Examples of existing infrastructure is shown in Figure 2.











Figure 2 Examples of Existing Infrastructure and Road Easements

## 4 DESCRIPTION OF THE ACTIVITIES

### 4.1. PROJECT DEVELOPMENT OBJECTIVES

24. The Digital FSM Project's development objective is to expand access to the internet, promote private sector investment in digital services and establish the critical foundations for digital government services and the digital economy. The Digital FSM Project will support the Government of FSM's efforts to move towards an integrated Digital Government Platform (DGP) that will help to provide greater efficiency and resource-sharing within Government, facilitate better communication with citizens and residents, and introduce a more service-oriented approach to serving individuals and business users. Technical assistance will also be provided on legal, regulatory and policy related issues, including core telecommunications sector regulation, and to build trust around the use of digital services.
25. Undersea fiber optic cable was installed under a previous project (Palau-FSM Connectivity Project) to the main island in Chuuk, Pohnpei and Yap. As highlighted previously, Kosrae will be linked to the East Micronesia Cable (EMC) once installed in late 2020 to early 2021. As part of the Digital FSM Project, domestic terrestrial fiber will be installed in the urban and rural areas of all the main islands, with the current preference is for the fiber to be above ground, although it may be underground in some locations. Mobile 4G base stations and satellite connectivity will be installed on outer islands (volcanic and atoll) with populations >100 people (estimated at 42 islands), although an assessment will need to be undertaken in atoll groups where there may be <100 on a specific island, but >100 within the atoll in close proximity to each other that microwave can be used.
26. A significant proportion of the population will benefit from access to improved mobile and broadband services. Over the medium term, the rollout of digital government services will enable individuals and businesses to benefit from increased access to core public services, particularly people in remote areas or on the outer islands who are currently excluded.

### 4.2. PROJECT OVERVIEW

27. The Digital FSM Project has four (4) components as per the disclosed Project Information Documents (PID). The general activities under each component are outlined below:

#### Component One: National Digital Connectivity Infrastructure

1. Improving national data connectivity through the installation of high-speed domestic (terrestrial) fiber network around the main island in each of the four states with a target of passing 80% of premises and connecting as many homes and businesses as possible to the network with Fiber to the Home (FTTH) technology. The infrastructure will predominantly use existing poles to provide the infrastructure for above ground fiber services and where necessary, there will be micro-trenching to install the fiber cable below ground where above ground is not feasible. Any FTTH connection will be above ground;
2. Bridging the connectivity gap for outer islands with the installation of microwave towers to provide 4G Long Term Evolution (LTE) technology and satellite connectivity to provide mobile internet. This technology will be constructed in atolls/islands with more than 100 people (42 islands) via a Public Private Partnership (PPP) mechanism;

#### Component Two: Digital Government Platform

1. Development of an all of Government Digital Government Strategic Framework (DGSF) to improve Government business processes and workflow efficiencies increasing access to services, and enhancing the quality of life for citizens and residents, while reducing the complexity for businesses transacting with Government.;
3. National ID system to provide a unique legal identity to all citizens and residents of FSM, and facilitate the authentication of that identity and electronic signature online. The objective of this voluntary process is to increase access to and enable the digitalization of public and private sector services;
4. Secure Government Network and Data Center, Disaster Recovery/Business Continuity and Government Cloud (FSM-Cloud);
5. Design and implementation of a National Government Portal to facilitate citizen and business access to public information; and
6. Implementation of selected e-Services in key sectors (e.g. health, agriculture, urban, transport and education).

#### Component Three: Enabling Environment for Digital Government and Digital Economy

1. Creation of a legal and regulatory framework for Digital Government through the development of institutional and data governance arrangements, particularly around data security, data protection, authentication protocols and processes, privacy, transparency, non-discrimination, Netsafe principles and practices, and support for digital transactions;
2. Creation and rollout of a Government's Cyber Security Program which will include the development of operational and administrative standards, assurance, monitoring, audit and Cyber-Security Emergency Response capabilities; and

3. Telecommunications Regulatory Support, which will include assistance with respect to licensing, interconnection, wholesale access, spectrum issues, quality of service monitoring and enforcement, technical regulation, and leadership and advocacy issues.
4. Strengthening of the Gender Division in the National Government to promote gender mainstreaming at the National and State level during the development and implementation of new policies and regulatory reforms for digital services and the development of the digital economy.

#### Component Four: Project Management

1. Provide funding for the Project Management Unit within the DTCl and for the Central Implementation Unit for the management of this and other projects over four years.

### 4.3. PROJECT COMPONENTS

#### 4.3.1. Component 1: National Digital Connectivity Infrastructure

28. Component One is designed to improve digital connectivity by supporting the establishment of national fiber networks on the main island in each state and to connect outer islands to mobile broadband 4G LTE services (investigations will be undertaken as to higher level technologies at the time of implementation).

#### 4.3.2. Subcomponent 1.1. Improving national connectivity:

29. The Digital FSM Project will utilize existing infrastructure (power poles) to install above ground fiber across the main islands and where not possible to use the poles, the project will install fiber underground through the use of micro-trenching. The installation of any new poles where necessary will be relatively simple. When poles cannot be installed, micro-trenching which is a form of cutting the substrate with a type of saw will be used, and as such, heavy machinery such as excavators, bobcats and trucks are not required. The micro-trenching will be undertaken normally on the side of the road within the current road easements. From the main network, individual above ground fiber will be used for Fiber To The Home (FTTH). The fiber cable will come to each house as requested. Once at the house, the owner or tenant will need to purchase a service from an individual company that is allowed to sell telecommunication services in Micronesia. It is likely that the installation of the fiber will bring new telecommunications companies to Micronesia to supply the services.
30. In locations where fiber is not viable, microwave towers will be placed within line of sight to bridge the connectivity. The towers will usually take up an area of about 15 meters by 10 meters, including space to be powered by solar. Examples of a tower are shown in Figure 2. Microwave towers require line of sight and has a footprint on both sides.
31. The infrastructure will be laid and owned by FSMTCC (Open Access Entity - OAE) as the wholesaler and then private companies will purchase data from FSMTCC who will then on-sell that data to private businesses and the community. Individuals cannot purchase directly from FSMTCC (OAE). By developing the infrastructure, this will establish a network that doesn't require telecommunications companies to need to expend up-front capital costs and reduces their investment risk. Through this, the price of telecommunications in FSM should be much lower than currently provided.
32. The work force in a particular location is likely to be limited to ten international staff and some local labor. Works are estimated to take about one month in any one location, with some shorter also possible. The labor force travelling to outer atolls may be at sea for a long period of time to reach all locations, most likely on the government field ship.
33. The backbone fiber optic cable will follow existing easements for primary and secondary roads. However, there are some exceptions, including:
  - **Kosrae** - a section of coastal road is proposed to be relocated to higher ground and the new alignment may not yet have easements in place. There is a future proposed "cross-island" road, which may need future fiber cable connectivity. The remote community of Walung on the northwestern side of the island is likely to be connected via microwave link and then fiber only within the village area, however the gravel access road may need to be improved (e.g. graded and compacted) to enable access for construction equipment and materials. Permissions would need to be negotiated for the fiber to be laid;
  - **Chuuk** - within Chuuk Lagoon it is proposed to install fiber cables on five lagoonal islands, including Weno, Tonoas, Udot, Fefan and Uman islands, although the final location and technology will be confirmed during project implementation. Only Weno and Tonoas have existing roads and easements in place, and land permissions for the other three islands will need to be established. Further, new base stations (microwave) are proposed for the Faichuk Island group (in three locations), Parem and Uman islands, which will require land permission and potentially ongoing leases for small land parcels for the towers and associated power supply. LTE capacity is also proposed to be added to sites with existing Telecom GSM towers on Weno, Udot, Romanum, Takuro, Fred, Netutu and Polle islands, which will require negotiations with Telecom and potential lease arrangements; and

- **Yap** - Rumung island (one of the four islands of “Yap Proper”) has no formal road, easements or power supply currently. Due to the population size and the prohibitive cost of shallow marine cable, it is likely that a microwave link would be preferable for this community.;
34. The above will be fully assessed during the infrastructure design phase for Component One.
  35. Examples of current road easements are contained in Figure 3.



Figure 3 Example Road Easement and Infrastructure Locations

4.3.3. Subcomponent 1.2. Bridging the connectivity gap for outer islands:

36. Subcomponent two will build telecommunications infrastructure on outer islands and where an undersea cable cannot be installed. The construction of the infrastructure and connectivity services (4G LTE base stations and satellite connectivity) will allow access to the internet in locations that currently do not have access or where they do, extremely slow and costly services. FSMTCC (OAE) will pay for the infrastructure with a private sector operator to install and maintain core infrastructure and offer specified services for up to 42 underserved outer islands.
37. Depending on the topography of each atoll, satellite technology may be attached to existing structures with power supplies (such as a school, dispensary, cell tower, or other existing public building). However, in some cases towers may need to be constructed in order to distribute the connection across a wider area (e.g. multiple islands in an atoll). In this case, there may be a requirement for some land to be leased. The preference would be to site these wherever possible within the footprint of existing government building lease areas Based on the site assessment, the towers could take up an area of about 15 meters by 10 meters particularly if being powered by solar if placed on land. Examples of a tower are shown in Figure 2. Examples of potential tower locations

are contained in Figure 3. Where Government leased land is not possible, alternative land arrangements will need to be established. During the design phase, all communities will be consulted to ensure land access and the location of the infrastructure is acceptable to the community. It is anticipated that construction works at each location will be completed within a few weeks.

#### 4.3.4. Component 2: Digital Government Platform:

38. Component Two will finance a range of interventions and investments including the development and implementation of a nationwide Digital Government Strategic Framework (DGSF). This DGSF will be non-infrastructure nationally and across the four states for five subcomponents as identified below.
- a. **Development of a Digital Government Strategic Framework (DGSF).** The DGSF will provide a platform for the Government's use of digital technologies. The DGSF will be "whole of Government" approach. Governance, services delivery and implementation arrangements will be detailed in the DGSF. The DGSF will be to improve Government business process and workflow efficiencies, and though this, it will increase the population's access to services, while reducing the complexity for businesses transacting with Government. The Government will undertake department and stakeholder consultations at both the National and State levels. The DGSF will align with the Government's Sector Development Plans, the FSM Infrastructure Development Plan for FY2016-FY2025 (IDP) and other specific strategic plans.
  - b. **National ID system.** This subcomponent will develop a voluntary National Digital Identification (NDID) system to provide an interface and authentication system so individuals can identify themselves so they can access government data. The subcomponent will ensure human rights, privacy, and the security is maintained so as individuals can feel safe that their data will not be used for other purposes. The NDID will greatly benefit access to health information, the ability to establish a company and e-commerce both within and external to Micronesia.
  - c. **Secure Government Network and Data Center, Disaster Recovery/Business Continuity and Government Cloud (FSM-Cloud).** This subcomponent will design a Digital Government Infrastructure and Platform to support information systems and applications, including secure email, for government users. The component will evaluate the use of the cloud for the storage of data and specifically consider climate change impacts, disaster risks security, resource management, operational and capital cost of operations, continuity of operations, and total cost of ownership.
  - d. **Design and implementation of a National Government Portal.** This subcomponent will develop a "one stop shop" for citizen and business wanting to access public information, and for any interactions and transactions with Government ministries and agencies. The "one stop shop" will allow consistency in the implementation of information services in each agency.
  - e. **Implementation of selected e-Services.** This subcomponent will develop selected digital services, based on a readiness assessment for digital services (institutional as well as technical). The subcomponent will provide advisory support to implement modifications related to business processes within relevant ministries and agencies. The focus will be on developing e-services and smart solutions in key sectors (such as health, agriculture, urban, transport and education) to provide convenient access to various government services.

#### 4.3.5. Component 3: Enabling environment for Digital Government and Digital Economy:

39. Component Three will provide technical assistance for the development of the legal and regulatory mechanisms required to underpin the investments in digital government and the digital economy. Component Three provide ongoing support on traditional regulatory issues for the telecommunications sector, particularly to promote investment, technological innovation and evolution, and the long-term interests of users of digital services. The Component has four subcomponents as listed below:
- a. **Legal and Regulatory Framework for Digital Government.** This subcomponent will develop advisory services for establishing and modernizing the legal and regulatory frameworks, along with institutional and data governance arrangements, particularly with respect to data security, data protection, authentication protocols and processes, privacy, transparency, non-discrimination, and support for digital transactions. This subcomponent will also finance advisory services for data governance and data protection safeguards specifically to strengthen data privacy and prevent the misuse of data, which is an essential part of supporting digital government and the transition to a digital economy.
  - b. **Creation and rollout of a Government's Cyber Security Program.** This subcomponent will provide funding to engage consultancies and capacity building activities to develop operational and administrative standards, assurance, monitoring, audit and Cyber-Security Emergency Response (CERT) capabilities. The Cyber Security Program will also include security training and awareness programs for all government users, government Information Technology (IT) and security professionals, management, citizens and the private sector. This information is especially important given Micronesia's status with the United States of America and the protection of the Micronesian population.

- c. **Telecommunications Regulatory Support.** This subcomponent will provide support and capacity for the independent Telecommunication Regulation Authority (TRA) that oversees all telecommunication businesses in Micronesia. The subcomponent will leverage off existing activities that are currently supporting the TRA under the Digital FSM Project, including licensing, interconnection, wholesale access, spectrum issues, quality of service monitoring and enforcement, technical regulation, and leadership and advocacy issues in the long-term interests of users. The subcomponent will also support institutional capacity building, particularly to strengthen the ability for the TRA to deliver on any additional responsibilities.
- d. **Strengthening of the Gender Division in the National Government.** This subcomponent will provide funding to engage consultancies and capacity building activities to promote gender mainstreaming at the National and State level through the development and implementation of new laws, regulations and policies around the telecommunications sector in Micronesia. This is a critical component of the Digital FSM Project based on consultations with communities.

#### 4.3.6. Component 4. Project Management

40. This component will provide the Government of FSM with monies to manage World Bank projects in Micronesia over the next four years.

### 4.4. CONNECTIVITY OPTIONS

41. As part of the development of this ESMP, consideration was given to potential options for Component 1 to mitigate or manage potential impacts in each location. The below provides an overview of the current considered options and alternatives That will be refined during detailed design. project implementation. The design team will work with the communities to identify the needs, benefits, land access issues and will refine the design and make recommendations on the best option for each location. The final technical design may have differing social and environmental impacts that may require further assessment.
  - Fiber to the Home (FTTH); or
  - Fiber to the Node (FTTN) – with “last mile” fiber or 5G options.
42. In addition, for islands within Chuuk Lagoon, Rumung Island (Yap Proper) and Walung (Kosrae), the options being considered include microwave towers to reach these communities.

#### 4.4.1. Fiber to the Home (FTTH)

43. FTTH is also sometimes referred to as fiber to the premises, whereby fiber cable is installed to each home, business or government building. This will be undertaken using existing electricity poles and stringing a fiber cable along the existing route of electricity cable..
44. FTTH avoids potential inequality of access to the service based on ability to pay for the fiber connection. FTTH would ensure that all households are able to obtain a fiber cable connection, and that the “last mile” of the fiber is owned, maintained and replaced if needed by FSMTCC (OAE) rather than by each land holder.

#### 4.4.2. Fiber to the Node (FTTN)

45. In the event that 5G technology has become established at the time the project proceeds, this may be a cost effective and beneficial “leapfrog” option. The backbone would require Fibre to a Node, coupled with 5G for connectivity to users from each node (instead of the “last mile” fiber to each premises). This option, if viable, would offer a number of advantages. It would avoid the cost and land implications of laying cables to each premises, reduce the visual impact of additional overhead cables in locations where underground isn’t feasible, and would ensure that FSM is benefitting from the most up to date technology available at the time of construction. It would also ensure equal access to all users regardless of income level and be available without additional infrastructure cost in areas where new houses or other buildings are constructed within the range of the 5G nodes. It should be noted that 5G would likely require specific community consultations, given (potentially unfounded) community concern regarding health implications of 5G.

#### 4.4.3. Microwave Connections

46. For islands within Chuuk Lagoon, Rumung Island (Yap Proper) and Walung (Kosrae), microwave towers are one of the options being considered to get the signal to these communities. Microwave connections require line of site between the towers on either end of the connection, and the land for these tower sites would need to be carefully selected to provide the optimal connectivity, whilst considering impact to existing community amenity and land ownership on both sides of the connection.

47. Other options include additional submarine cables, although it is likely that these will be prohibitively expensive and subject to potential high ongoing maintenance costs as damage is more probably in shallow water..
48. Depending on the selected sites for microwave or 5G towers, there may be a need for land to be acquired or leased.

#### 4.4.4. Satellite Connections to Outer Atolls

49. For outer islands, the proposed design is satellite dishes to be attached to the side of existing public buildings, such as schools or health dispensaries.
50. The topography of some atolls may require a tower to broadcast the signal across larger areas, to multiple islands within the atoll structure. In cases where this is required, an assessment of the land implications would need to be undertaken.

## 4.5. PROJECT BENEFITS AND BENEFICIARIES

51. Independent economic analysis of the proposed project indicated that “economically speaking, except for one scenario in Yap, all Fixed Broadband scenarios show positive Economic impacts and the Mobile Broadband scenario shows high positive results for all FSM islands.”<sup>3</sup>
52. Stakeholder consultations have indicated overwhelming support for the Digital FSM project, with perceived level of benefits to be extremely high. Expected benefits of the project include improved access to information, social connections to family and friends in other locations, improved access to educational resources, banking services, opportunities for increased economic participation, access to government eServices (including the health system), increased use of internet for meetings instead of requiring physical travel, and many more. Remittances are a major source of revenue for families in FSM, and internet connectivity will make these vastly easier to access. Online purchasing has also been identified as a major benefit to individuals and businesses.
53. Increased internet connectivity through the Digital FSM project will undoubtedly be beneficial for the people of FSM. However, increased access will also introduce some risks, as is experienced globally.
54. Project beneficiaries are expected to be all internet users – individuals, businesses, schools, hospitals and health clinics, NGOs and government departments. However, it is possible that some potential beneficiaries may be excluded from project benefits and allowing a ‘digital divide’ to develop, as has been seen in Australia and elsewhere. The Telecommunications Regulatory Authority (TRA) will have a key role to play in ensuring equal access for all FSM citizens, accounting for disadvantage from income level, disability, gender, age or remoteness, through structured pricing models. Project Sub-Components 3A and 3C include technical assistance to TRA, including considerations of non-discrimination in the regulatory framework (Component 3A) and “leadership and advocacy issues in the long-term interests of users” (Component 3C).

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<sup>3</sup> Polyconseil, FSM Connectivity Project, Economic and Financial Assessment, 26 July 2019



## 5 INSTITUTIONAL AND LEGAL FRAMEWORK FOR ENVIRONMENTAL AND SOCIAL MATTERS

### 5.1. INTRODUCTION

55. The following section provides an overview of the institutional and legal framework under which the Digital FSM Project will be undertaken.

### 5.2. FSM LEGISLATION, REGULATIONS AND POLICIES

#### 5.2.1. Introduction

56. The Government of FSM is modeled after the federal system similar to that of the United States with a national president and four state governors with respective legislatures and judiciaries. The government of Chuuk, Pohnpei and Yap has four levels of governance – National, State, municipal, and traditional. Kosrae does not have the fourth level of government, as it no longer has traditional leadership in comparison to the three other States.
57. The four states where the Digital FSM Project will be implemented have considerable degrees of autonomy. Each State Government has its own Constitutional Government, consisting of the three branches: Executive, Legislative and Judicial, typical of the Westminster system.
58. Each State also has its own set of environmental and social laws and regulations geared to protect the States from among other things, the effects of climate change. Under the Compact II, Article VI and section 161 of Title II, FSM is committed to applying the *National Environmental Policy Act 1969* (since repealed) and “to develop and implement standards and procedures to protect its environment.”
59. The following pieces of legislation are relevant to the Digital FSM Project.

#### 5.2.2. National Legislation, Policies and Regulations

60. There is very limited legislation relating to public consultations or indigenous peoples. The main social legislation is included in the relevant environmental laws and Codes as described below.

##### 5.2.2.1. Constitution

61. The Constitution, as the supreme law of FSM, establishes a system of national, state and municipal governance. Each State is required to have its own democratic constitution. The Constitution refers to traditional practice and custom as a guiding influence in all aspects of decision-making in FSM and seeks to preserve the role of tradition and custom in FSM life. To support this, a Council of Chiefs, consisting of traditional leaders and elected representatives, is provided for in the Constitution.
62. The Nation’s executive powers are vested in the President who is elected by Congress for a four-year term and limited to no more than two consecutive terms. The President appoints judges, ambassadors and principal officers of government departments in the National Government.
63. The National Government’s judicial power is vested in the Supreme Court, and subsidiary courts, established by statute. The Supreme Court consists of a Chief Justice, the chief administrator for the national judicial system. The Chief Justice may be supported by no more than five associates. Court decisions are constitutionally required to be consistent with Micronesian customs and traditions.
64. The legislative power of the National Government is vested in Congress. The Congress includes one member elected from each of the four States, an additional member elected from congressional districts in each State apportioned by population. Chuuk, Pohnpei and Yap may decide that one of its seats be reserved for a traditional leader in place of one of the elected representatives.
65. To enact a law, a Bill must pass the first reading with a two-thirds majority of all members and then pass the final reading on a two-thirds vote of all State delegations, each delegation having cast one vote. Congress can also override a Presidential veto by a three-quarter vote of all State delegations, each casting a single vote.
66. Regulation development, as prescribed under the *Federated States of Micronesia Administrative Procedures Act*, requires the widespread publication and dissemination of proposed regulations before adoption, including radio announcements in English and indigenous languages. Opportunities for public comment and public hearings are incorporated in the Act.
67. In most instances, national legislation is supplemented, or even duplicated, by State legislation. This provisional review is confined to current national legislation based on the report prepared by Elizabeth Harding in 1992. That report recommends a thorough review of existing FSM environmental and natural resource legislation with the objective of rationalizing existing laws and regulations, providing a more effective mechanism for coordination at both National and State levels and removing outmoded

law that was promulgated under the Trust Territory Arrangements. Apart from some specific areas of environmental and natural resources law, such as Title 24 directed at the administration of fishing within the exclusive economic zone, this need still exists.

#### 5.2.2.2. Environmental legislation

68. The *Environment Protection Act* (revised Code 2014) is a national government declaration of on-going commitment, in cooperation with State and municipal governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which the people of FSM and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of FSM.
69. The Act declares that it is the continuing responsibility of the FSM to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate governmental plans, functions, programs, and resources to the end that the inhabitants of the FSM may:
  - a. Fulfil the responsibilities for each generation as trustee of the environment for succeeding generations;
  - b. Assure for all Micronesians safe, healthful, productive, and aesthetical and culturally pleasing surroundings;
  - c. Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable or unintended consequences; and
  - d. Preserve important historic, cultural, and natural aspects of our Micronesian heritage, and maintain, wherever possible, an environment, which supports diversity and variety of individual choice.
70. The effort to protect and preserve the environment needs to be carried forward in close cooperation with the States in the formulation of policy, enforcement, and other activities.
71. The FSM recognizes that each person has a responsibility to contribute to the preservation and enhancement of the environment. Section 302 of the *Environmental Impact Assessment Act* states that - 1) any person, prior to taking any action that may significantly affect the quality of the environment within the Exclusive Economic Zone of the Federated States of Micronesia, or within the boundaries of the National Capital Complex at Palikir, must submit an environmental impact statement to the Director, in accordance with regulations established by the Director. (2) The environmental impact statements required by subsection (1) of this section are public documents.
72. Building on the *Trust Territory Environmental Quality Protection Act* (Title 25 of the FSMC), the *FSM Environmental Protection Act 1984* (FSM EPA), and its subordinate instruments, seeks to provide the legislative basis for the protection of the environment, including cultural, historic and natural aspects of Micronesian heritage, throughout FSM. The Act acknowledges that close cooperation between the National and State Governments is required to support this objective.
73. The 1969 Act established the Environmental Protection Board within the Office of the President. The Board is composed of five members: "one member from each State and one member appointed by the President". In 1987, an Act to Reorganize the Government of the FSM redefined the Board to mean the Secretary for Human Resources.
74. The Act requires the Secretary to enter into written cooperative arrangements with the States or State agencies for the purposes of providing funds to the States, collecting data on local needs and transferring authority to the States to act as agents of the National Government in implementing environmental programs at the State level. Such delegation of functions may be withdrawn on written advice from the Secretary if the delegation results in termination of any financial grant.
75. The Secretary, as a result, has broad authority to protect health, welfare and safety and to implement policy and strategies, through the promulgation of regulations, to remedy pollution and contamination of air, land and water. Current regulations, which draws heavily on legislation in place during the Trust Territory arrangements include:
  - a. *Trust Territory Air Pollution Control Standards and Regulations 1980* -This Regulation sets air quality standards by preventing or controlling the emissions of air contaminants at their source. The Regulations incorporates US-EPA National Emission Standards for Hazardous Air Pollutants;
  - b. *Trust Territory Pesticides Regulations 1980* - this Regulation establishes a system of control for the importation, distribution, sale and use of pesticides. Systems of permits and certification are established under the Regulations;
  - c. *Public Water Supply Systems Regulations 1983* - The FSM EPA prescribes "drinking water regulations" as applying to public water systems and specifies contaminants, which may adversely impact on human health, safe levels of contaminants and describes procedures and criteria to secure safe drinking water supplies. The 1983 Regulation establishes minimum standards and requirements to ensure that water supply systems are protected against contamination and pollution and do not constitute a health hazard. The Secretary of Human Resources administers the Regulation;
  - d. *Marine and Freshwater Quality Standards Regulations 1986* - This Regulation identifies the uses for which waters of FSM shall be maintained and protected, to specify water quality standards required to maintain the designated use and to prescribe requirements to maintain specified water quality. Any entity responsible for a point source of discharge that

threatens a breach of these standards, unless it has received a discharge permit under the National Pollutant Discharge Elimination System (NPDES) from the United States Environment Protection Agency, is in breach of these Regulations;

- e. *Trust Territory Solid Waste Regulations 1979* - These Regulations establish minimum standards for the design, construction, installation, operation and maintenance of solid waste storage, collection and disposal systems. "Solid Waste" is defined as "garbage, refuse, and other discarded solid waste materials" not including substances in water sources, but including liquid waste such as waste oil, pesticides, paints, solvents and hazardous waste. A "disposal system" includes the entire process of storage, collection, transportation, processing and disposal of solid waste by any person or authority;
- f. *Toilet Facilities and Sewerage Disposal Regulations 1977* - The purpose of these Regulations is to establish minimum standards for toilet facilities and sewerage disposal to reduce environmental pollution, health hazards, and public nuisance from such facilities. Standards are established for i) flush toilets connected to a sewerage system available to the public, ii) flush toilets connected to septic tanks and iii) a pit privy or outside banjo. All public and private buildings require toilet disposal facilities approved by the Secretary of Human Resources. The Regulations make it unlawful to dispose of treated or semi-treated sewerage into any body of water in FSM, unless it can be clearly demonstrated that such activity is necessary for the economic and social benefit or research and that the activity poses no public health hazard;
- g. *FSM EPA Earthmoving Regulations 1988* - These Regulations provide that "no person shall release funds, equipment or materials or building permit to those engaged in earthmoving activities requiring a permit until a permit is issued by the Secretary of Human Resources." Earthmoving is defined to include activities of a continuous nature such as excavation or quarrying which disturb or alter the surface of the land. Earthmoving also applies to the subdivision of land, and the moving, depositing or storing of soil, rock, or earth; and
- h. *FSM EPA Environmental Impact Assessment Regulations 1989* - These Regulations require the National Government and its agencies to submit an Environmental Impact Statement (EIS) to the Secretary of Human Resources prior to taking any "major" action significantly effecting the quality of the human environment. "Effect" is defined to include indirect, direct and cumulative effects in areas such as land use, population density, air, water and natural systems including ecosystems. "Effects" may be ecological, aesthetic, cultural, historical, economic, social or health related. "Significant Impacts", as determined as a result of a preliminary assessment, requires a Comprehensive Environmental Impact Assessment (EIA). Draft EIA statements are to be made available for public comment and review, including provision for a public hearing.

#### 5.2.2.3. Resource Development, Management and Conservation

- 76. Title 23 – Resource Conservation (Chapter 2) of the *Trust Territory Endangered Species Act 1975* provides for the protection of endangered flora and fauna. The Act declares the indigenous plants and animals of the FSM to be of aesthetic, ecological, historical, recreational, scientific and economic value. The Act further states that the policy of FSM is to foster the wellbeing of flora and fauna including the prevention of the extinction of any species.
- 77. The Act is administered by the FSM Director of the Department of Resources and Development and provides the Director with the authority to set up conservation and research programs aimed at conserving endangered and threatened species. It also provides authority to acquire land or aquatic habitats for the conservation resident endangered or threatened species. It is uncertain if any acquisitions or associated conservation programs have been established by the Department.
- 78. The Act, anticipating the FSM's ratification of the *Convention on International Trade in Endangered Species of Wild Flora and Fauna* (CITES), prohibits the importation of any species listed by CITES. A subsidiary to the *Endangered Species Act* is the Regulation, Chapter 5; Endangered Species, which lists endangered species with FSM or pan-Micronesia ranges. The list includes the blue and sperm whale; the Chuuk Micronesia pigeon; the hawksbill and leatherback turtles; nightingale reed warbler; Chuuk greater white eye; Pohnpei great white eye; Pohnpei mountain starling (since pronounced as extinct); Chuuk Palm and the Chuuk poison tree. The Act provides for supporting regulations to be promulgated. None have been issued to date.

#### 5.2.2.4. Cultural Heritage

- 79. The FSM Code Title 26 – Historical Sites and Antiquities states that it is FSM policy to protect and preserve the diverse cultural heritage of the peoples of Micronesia and to identify and maintain areas, sites and objects of historical significance. "Cultural attribute" is defined to include: all aspects of local culture, tradition, arts, crafts, all social institutions, forms of expression and modes of social interaction. "Historical property" is defined to mean sites, structures, building, objects, and areas of significance to local history, archeology and culture. "Historical artefact" means an object 30 years or more in age.
- 80. Although the Act allows for the establishment of the Institute of Micronesia Culture and History, the Institute was never established and, in 1987, the relevant section of the Act was repealed. The administrative body charged with the preservation of cultural heritage is the Office of Administration Services, which established the Division of Historic Preservation in 1988. The Division is currently staffed by one Historic Preservation Officer. To promote liaison with the States, local staff are employed to assist with the work of the Division in the States.

### 5.2.3. State Legislation, Policies and Regulations

81. The following sections provide a list of relevant Legislation, Policies and Regulations and the State level.

#### 5.2.3.1. Chuuk

82. The following Chuuk laws and policies that may apply to the Digital FSM Project:

- a. Chuuk Constitution 1989;
- b. Memorandum of Understanding (MOU) between the State and National Governments delegating State power to administer, at State level, the Solid Waste Management Permit Program and the Solid Waste Management Permit Variance Program;
- c. Memorandum of Understanding (MOU) between the State and National Governments delegating State power to administer, at State level, the National Earthmoving Regulations;
- d. Memorandum of Understanding (MOU) between the State and National Governments delegating State power to administer, at State level, the Pesticides Applicator Certification Program and the Restricted Use Pesticide Dealer License Program; and
- e. *Chuuk State Historic Preservations Act* – relating to wrecks in Chuuk lagoon as might be relevant to any subsea fiber cable laid within Chuuk Lagoon.

83. Chuuk has developed a template for Land Access Agreements that is managed by the State Land Management Office which allows a grantor to assign an easement and right of way for the installation, operation, maintenance and repair of all utilities (it is assumed that telecommunications equipment would be a utility) including but not limited to underground and above ground water and sewerage pipelines, and electric power transmission lines together with all necessary related equipment.

#### 5.2.3.2. Kosrae

84. The following Kosrae laws and policies that may apply to the Digital FSM:

- a. Constitution of the State of Kosrae;
- b. *Kosrae State Code* Title 7, Chapter 4 which establishes the Kosrae EPA;
- c. *Kosrae State Code* Title 9, which establishes the Kosrae Protected Areas System;
- d. Kosrae Island Resource Management Act;
- e. *Kosrae Code* Section 13.506 related to littering;
- f. *Kosrae Code* Section 13.514 related to water quality;
- g. *Kosrae Code* Section 11.1401 and 11.1402 (a regulation) concerning the impact review for the protection of antiquities and traditional culture;
- h. *Kosrae Code* Section 11.1602 related to Psittacine birds;
- i. *Kosrae Code* Section 13.1201 related to toilets and the disposal of human excreta; and
- j. *Kosrae Code* Section 13.524 – endangering a species.

85. The Government of Kosrae is currently undertaking a process of analysis all easements with the State.

#### 5.2.4. Pohnpei

86. The following Pohnpei laws and policies that may apply to the Digital FSM:

- a. The Constitution of Pohnpei;
- b. Public Trust Lands Distribution Act 1980;
- c. Public Lands Act 1987;
- d. Deed of Trust Act 1987;
- e. *Trust Territory Environmental Protection Act* (preserved from the Trust Territory environmental law) and subordinate regulations relating to i) air pollution, ii) pesticides, iii) public water supply systems, iv) marine and freshwater quality, v) solid waste, vi) toilet facilities and sewerage disposal, and vii) earthmoving;
- f. Transportation Zone Act 1987;

- g. Conservation and Resource Enforcement Act 1982;
- h. Forest Management Act 1979;
- i. Pohnpei Watershed Forest Reserve and Mangrove Protection Act 1987 and subordinate regulations (draft) to both the Forest Management Act and Pohnpei Watershed Forest Reserve and Mangrove Protection Act 1987; and
- j. Designation of State Bird Act.

#### 5.2.5. Yap

87. The following Yap laws and policies that may apply to the Digital FSM:
- a. Constitution of the State of Yap;
  - b. *Environmental Quality Protection Act 1987* and subordinate draft pesticide regulations;
  - c. Draft Water Supply Systems Regulations – based on the U.S. Trust Territory Public Water Supply Systems Regulations;
  - d. Trust Territory Solid Waste Regulations 1979;
  - e. Draft Toilet Facilities and Sewerage Disposal Regulations;
  - f. Draft Earthmoving and Sedimentation Regulations;
  - g. *Yap State Code* Chapter 10, Section 1008 – wildlife conservation;
  - h. *Yap State Code* Title 18, Chapter 10, Section 1010 – cultured species;
  - i. *Yap State Code* Title 18, Chapter 10, Section 1101 – fruit bats; and
  - j. *Yap State Code* Title 20, Chapter 3 – building permits.

### 5.3. ENVIRONMENTAL IMPACT ASSESSMENT IN FSM

#### 5.3.1. FSM Environmental Impact Assessment Regulations

88. The purpose of the EIA Regulations is to implement Section 13 of the *Federated States of Micronesia Environmental Protection Act* by establishing standard procedures for preparation of an environmental impact assessment statement prior to taking or funding any major action that may significantly affect the quality of the human environment.
89. Part I (l) defines Project Proponents as the FSM National Government or its agencies or the recipient of funding from the FSM National Government or its agencies, that propose to undertake any major action significantly affecting the quality of the human environment. Part II (2.1) requires project proponents “to conduct an EIA itself or contracts for its conduct, and is responsible entirely for its adequacy, and timely completion.”
90. Part II (2.2) empowers the Secretary of the Department of Human Resources to receive EIA Statements and to review them for compliance with 25 F.S.M.C. 702 and the regulations in terms of format, adequacy of information and objectivity. The Secretary shall only authorize commencement of projects or release of funds for the proposed project if s/he determines that the EIA Statement is sufficient. No permits shall be issued until approval of the EIA Statement by the Secretary.
91. Part III sets out the EIA process. Part IV elaborates on this process, which is a two-step assessment process with the first step being the submission of an Initial Assessment using a checklist template. If following evaluation there are potentially severe environmental impacts, then a Comprehensive EIA is required. The contents of the Comprehensive EIA are set out in Part V.
92. The EIA process is intended to help the general public and government officials make decisions with the understanding of the environmental consequences of their decisions, and take actions consistent with the goal of protecting, restoring, and enhancing the environment. These regulations provide the directions to achieve this purpose. In addition, these regulations are designed to:
- a. Integrate the EIA process into early planning of projects to ensure timely consideration of environmental factors and to avoid delays; and
  - b. Identify at an early stage the significant environmental issues requiring further study and de-emphasize insignificant issues, thereby defining the scope of the EIA.

#### 5.3.2. State EIA regulations

93. The four States of FSM each have their respective state level regulation elaborating on the National EIA Regulation and stipulating their specific requirements. The state level EIA Regulations are briefly discussed below.

### 5.3.2.1. Chuuk State Environmental Protection Act 1994

94. The Chuuk State *Environmental Protection Act 1994* creates and empowers the Chuuk State EPA. Section 1005 defines the functions and powers of the Chuuk EPA, one of which (para f) is:

*“Establish and provide for the continuing administration of a permit system whereby a permit shall be required before the discharge by any person of any pollutant in the air, lands and water or for the conduct by any person of any activity, including but not limited to, the operation, construction, expansion, alteration of any facilities.”*

95. Section 1006 of the Act states that “A person shall submit an environmental impact statement to the Agency, in accordance with regulations established by the Agency, prior to taking any major action which may substantially affect the quality of the environment.”
96. There are penalties for any persons who violate the Act or any permits, orders etc issued under it. The Act is not clear regarding the process of applying for a permit, and the environmental assessment requirements to support such an application.

### 5.3.2.2. Kosrae State Development Regulation 2014

97. The purpose of the *Kosrae State Development Regulation 2014* is to implement Title 7, Chapter 4 of the Kosrae Code by establishing the EIA process which is intended to help the general public and government officials make decisions “with the understanding of the environmental consequences of their decisions, and take actions consistent with the goal of protecting, restoring, and enhancing the environment. In addition, the regulations are intended to:

- a. Integrate the EIA process into the early planning of projects to ensure timely consideration of environmental factors in order to avoid delays; and
- b. Identify at an early stage the significant environmental issues requiring further study and de-emphasize insignificant issues, thereby defining the scope of the Environmental Impact Statement (“EIS”).”

98. The Regulation defines a “development project” to mean the construction, alteration, movement, fill, removal, disposal or any other modification to the land or coastal areas. A development project can include, but is not limited to the installation, placing, or building of surface structures, utility lines, shopping centers, clearing land, golf courses, apartment complexes, hotels, schools, roads, parking areas, or any other similar activity. It also defines “earthmoving” to mean any construction or other activity which disturbs or alters the surface of the land, including, but not limited to excavations, embankments, land development, subdivision development, mineral extraction, and the moving, depositing or storing of soil, rock, or earth.
99. Section under Part III sets forth a Development Review Permit Process, which among other things, requires the developer to conduct initial consultation with the Kosrae Island Resource Management Authority to explain the planned development and to determine if a Development Review Permit application is necessary. If necessary, the proponent then submits an application for a Development Review Permit including an EIA Checklist (and other attachments). The review of the application will involve a determination if an EIS is necessary, depending on the Technical Advisory Committee’s assessment of the nature and severity of the potential impacts. A Development Review Permit will be granted by the Kosrae Island Resource Management Authority.
100. The DRC also determines if (under Section 3.7) the proposal requires a public information meeting “whenever it is reasonably foreseeable that a project will result in a significant impact to the environment. DRC will ensure that all affected persons will have the opportunity to provide input, written or oral, for the project.”

### 5.3.2.3. Pohnpei State Legislative Framework

101. Pohnpei’s *Environmental Protection Act 1992* establishes a procedure for preparation of an environmental assessment statement prior to any action that may significantly affect the quality of the human environment. The degree of environmental assessment detail for a project depends upon the significance of its potential environmental impacts. Significance of the action is determined by the EPA on consideration of an Initial Assessment (with a prescribed checklist) submitted by a proponent.
102. The EPA receives the environmental assessment document and reviews it for compliance with S.L. No. 3L-26-92 and the regulations in terms of format, adequacy of information and objectivity. The EPA authorizes commencement of a project, through a permitting process, only if it determines that the assessment is sufficient. Once the completed assessment is presented to the EPA Board of Directors and upon the final deliberations of the EPA Board, a permit will be given to the project proponent with conditions for compliance of the project proponent as required by EPA regulations.
103. There is a range of potentially required permits and licenses for a major development in Pohnpei. These comprise:
- a. EPA Earthmoving Permit;
  - b. Land Ownership documentation;
  - c. Forestry Clearance;
  - d. Municipal Government Clearance (planning approval);

- e. Department of Lands approval; and
  - f. Historic Preservation clearance.
104. The *Environmental Protection Act 1992* also requires the active assistance of all government authorities to achieve its goals. The result, in practice, is that only the EPA Earthmoving Permit is required. This applies to projects with significant amounts of earthworks. Its focus is the management of soil and water conservation.

#### 5.3.2.4. Yap - Regulations for Environmental Impact Assessment, Title II, Chapter I. 1995

105. Administered by the Yap State Environmental Protection Agency (YSEPA), the *Regulation for Environmental Impact Assessment 1995* implements the *Yap State Environmental Quality Protection Act* by establishing standard procedures for the preparation of an EIS prior to any action proposed to be undertaken in Yap State that may significantly affect the quality of the human or natural environment. In addition, these regulations are designed to:
- a. Integrate the EIA process into early planning of projects to ensure timely consideration of environmental factors and to avoid delays; and
  - b. Identify at an early stage the significant environmental issues that may require further study thereby the, scope of the EIA.
106. The Regulation requires that all projects require a Preliminary Environmental Impact Statement (PEIS) (Part II; 2.1, 2.2) prior to and preferably early in the planning stages of the development proposal. The PEIS will comprise of the following information:
- a. A brief description of the project;
  - b. A description of the environmental setting of the project;
  - c. A general description of the project's technical, economic, social, health, and environmental effects;
  - d. The further identification of possible environmental impacts by use of the checklist provided in the Regulation under Appendix A;
  - e. Possible alternatives to mitigate any adverse impacts;
  - f. A brief description of the need for the proposed project (e.g. community benefit, environmental benefit); and
  - g. The name of the person or persons who prepared or participated in preparing the PEIS.
107. There are exemptions from the preparation of a PEIS for activities that "will probably have minimal or no significant effects on the environment." Among those exempted activities are "(1) Operations, repairs, or maintenance of existing structures, facilities, equipment, or topographical features, involving negligible or no expansion or change of use beyond that previously existing; (2) Interior alterations involving things such as partitions, plumbing, and electrical conveyances."
108. Where the environmental impacts in the PEIS is assessed by the EPA Board to be have severe potential impacts, the proponent is required to prepare a more detailed environmental assessment report (Draft EIS) which will be reviewed and commented on by the EPA Board and others including the public, and these comments are send to the Proponent for review and incorporation into the Final EIS.
109. A process of public consultation and review of the Draft EIS is also provided in the Regulation (Section 3.4) with all written comments to be received by EPA after a specified period. The EPA Board makes a determination whether or not to approve the proposal, with or without conditions, or to decline, within 30 days of submission of the finalized EIS.

#### 5.3.3. Labor Law

110. FSM has national legislation that outlines worker's rights. The Labor Code outlines hiring of non-resident workers, labor development, and other requirements. The Labor Code requires:
- a. Non-resident workers to obtain health certificates, and have a minimum of two years of related work experience;
  - b. Any benefits provided to non-resident construction workers, such as housing, transport, etc. will also be provided to any national contractor who is required to leave their principle place of residence for work;
  - c. Applications for foreign workers are needed, unless the foreign workers will be in the country less than 90 days; and
  - d. Minimum employment conditions outlined in the Code apply to all foreign workers.
111. There is minimal legislation related to occupational health and safety. The *Public Employment Code 2014* requires that workers exposed to hazardous working conditions are paid 25% more.

## 5.4. WORLD BANK ENVIRONMENTAL AND SOCIAL STANDARDS

112. The key Environmental and Social Standards (ESS) that are *relevant* to this project and require specific instruments to be prepared are:
- a. ESS1 – Assessment and Management of Environmental and Social Risks and Impacts;
  - b. ESS2 – Labor and Working Conditions;
  - c. ESS3 – Resource Efficiency and Pollution Prevention and Management;
  - d. ESS4 – Community Health and Safety;
  - e. ESS5 – Land Acquisition, Restrictions on Land Use and Involuntary Resettlement;
  - f. ESS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources;
  - g. ESS8 – Cultural Heritage; and
  - h. ESS10 – Stakeholder Engagement and Information Disclosure.
113. The following ESS are *not relevant* to the Project:
- a. ESS7 – Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities; and
  - b. ESS9 – Financial Intermediaries.
114. As a result of this assessment, the Borrower is required to prepare the following instruments in accordance with the World Bank’s Environmental and Social Framework (ESF):
- a. ESMP;
  - b. Land Access Process;
  - c. Environmental and Social Commitment Plan (ESCP);
  - d. Labor Management Procedure (LMP) (Chapter 8); and
  - e. Stakeholder Engagement Plan (SEP).
115. This ESMP is an integral part of compliance with the ESF. Screening of known activities and those likely to be undertaken has indicates an assessment of “*moderate*” for the project for both environmental and social risks and impacts. This screening finds that impacts are less significant and that a range of potential measures for mitigation can be readily designed.

#### 5.4.1. ESS1: Assessment and Management of Environmental and Social Risks and Impacts

116. The environmental and social risks and impacts primarily arise from Project Component 1 - the installation and operation of terrestrial and mobile internet infrastructure (fiber cable, satellite towers and dishes, small equipment sheds and boxes), and also to the technical advisory such as developing the Digital Government Strategy Framework (DGSF) and National ID system.
117. The environmental risks are minor and relate primarily to managing earthworks and waste during infrastructure installation and maintenance. The risks to the community and workers during installation and maintenance relate to health and safety disruptions to access to properties and businesses. These types of risks can be managed through the mitigation measures in Chapter 7 the installation of infrastructure, training of workers and good supervision and oversight of mitigation measures, as outlined in the Labor Management Procedures (LMP).
118. The social benefits of increased connectivity are increased access to government services, welfare, education, health etc., and better connectivity to family, friends and social networks. This is particularly beneficial to those who may be considered vulnerable due to disabilities, people isolated from the broader community due to unemployment, parental roles, age, etc. and people living in remote island communities. Social risks relating to increased connectivity are commonly understood to be exposure to scams, fraud, identity theft, viruses, hacking, cyber-bullying, gambling, addiction, online grooming of children, exposure to illicit material and the dark web, and risks relating to unequal access based on income, gender, age or ability.

#### 5.4.2. ESS2: Labor and Working Conditions

119. The Digital FSM Project will require contractors to install equipment, the terrestrial fiber network and the Government will enter into a Public-Private Partnership for the installation of equipment in the outer islands. Local labor where feasible should be used (a priority) and in compliance with local labor requirements and ESS2. ESS2 requirements will be mandated through the project ESMP, bid documents, contracts and in the PPP agreement, and supervised by the Project Manager and CIU safeguard team.
120. The Labor Management Procedures (LMP) are outlined in Section 9. This describes the findings of the ESA, national labor policies and practices, the types of project workers that are likely to be involved, the procedures to apply ESS2, and a grievance mechanism. Labor influx issues are also addressed in the LMP.



### 5.4.3. ESS3: Resource Efficiency and Pollution Prevention and Management

121. ESS3 is only of minor relevance. There will be no emissions of pollution and no significant energy or water use required in installation or operation of the infrastructure. Small amounts of waste may be produced during installation and can be effectively managed under the ESMP to avoid and limit waste to landfill and maximize recycling and reuse.

### 5.4.4. ESS4: Community Health and Safety

122. Community health and safety issues, which may occur with the project are considered to be minor and manageable. These are expected to include road safety and pedestrian safety during micro-trenching, and the installation of above ground infrastructure. The Contractors may bring in workers from overseas and therefore there may be risks to the local communities from the labor influx. There are documented cases of imported labor creating markets for sex workers in FSM, and this will be a key risk requiring management. The social assessment has identified issues in FSM relating to labor rights, issues with imported labor, gender, gender-based violence, child labor, demand for sex workers, trafficking and suitable management measures and mitigations are defined in the ESMP.

### 5.4.5. ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

Land access will be required to install the fibre network on the main islands and the mobile and satellite infrastructure on outer islands, though use of land is not expected to result in any significant impacts. Where possible government land will be prioritised by using existing easements alongside roads for the installation of the fibre cable, and existing government leased plots for towers or poles where possible. Where this is not available, infrastructure will be located on private land. Access will be agreed via a negotiated lease arrangement or land use agreement for all land, regardless of choice of technology or location. Where voluntary arrangements can not be agreed, alternative land will be found for project infrastructure or alternative connectivity infrastructure will be proposed where possible. The project will not compulsorily acquire land or require any involuntary land access. Livelihood impacts will largely be avoided through appropriate siting of infrastructure. There is potential for impacts to crops or trees during construction such as the need to trim existing vegetation (eg during stringing of cables, installation of poles or underground cable) and operation (eg restriction on activities, ongoing maintenance) but significant impacts, including to livelihood, are excluded from project activities. The Land Access Process, consistent with the objectives of ESS5, outlines the process for managing land impacts and agreeing lease arrangements or voluntary land use agreements.

### 5.4.6. ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

123. ESS6 has minor relevance to the Project. The footprint of the infrastructure is small and will mostly be laid within road reserve/easement or on Government-leased land. Most infrastructure is flexible in its location and areas of natural habitat or conservation value can be avoided. Any physical disturbances will be minor and readily mitigated. Chapter 7 contains mitigation measures to avoid and remedy the minor impacts on vegetation and other habitats that may be disturbed.

### 5.4.7. ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

124. The majority of people in FSM are Micronesian and will be the overwhelming beneficiaries for the project. The social assessment and project consultations have been conducted in accordance with ESS7 and the cultural needs of the people in each State. The SEP has identified outer islanders as potentially more vulnerable, due primarily to the remoteness of their communities, and addressed the specific needs for consultations of these groups.

### 5.4.8. ESS8: Cultural Heritage

125. ESS8 has minor relevance to the Project. The footprint of the infrastructure is small and will mostly be laid within road reserve or on government-leased land. Most infrastructure is flexible in its location and cultural heritage sites can be avoided. Chapter 7 contains mitigation measures to avoid impacts on cultural heritage, including consultation, identification and protection of key sites and the implementation of chance find procedures.

### 5.4.9. ESS9: Financial Intermediaries

126. Not relevant.

### 5.4.10. ESS10: Stakeholder Engagement and Information Disclosure

127. Stakeholder engagement is critical in the role out of infrastructure and access to improved services but also critical in the development and implementation of the institutional and democratic frameworks for improved e-Government services. A social assessment has been carried out to inform the stakeholder engagement plan. Consultations have been carried out in the local

languages and in culturally appropriate formats. Additional resources may be required to assist in the development of an inclusive e-Government framework where stakeholders are fully engaged.

#### 5.4.11. Other Relevant Project Risks

128. The project applies to all four states of FSM. There is a contextual risk due to the federated nature of the country, with different responsibilities between the Federal and State Governments and logistical aspects of managing risks, due to the PMU being based in Pohnpei at the national Government.

#### 5.4.12. World Bank General Environmental, Health and Safety Guidelines

129. The World Bank Group's General Environmental, Health, and Safety Guidelines (EHS Guidelines) (World Bank Group, 2007) represent good international practice for managing occupational health and safety (OHS) risks. The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs.
130. The fundamental premise for OHS under the EHS Guidelines is that "Employers and supervisors are obliged to implement all reasonable precautions to protect the health and safety of workers" and that "Companies should hire contractors that have the technical capability to manage the occupational health and safety issues of their employees...".
131. The overall OHS philosophy embodied in the EHS Guidelines is that preventive and protective measures should be introduced according to the following order of priority:
  - a. Eliminating the hazard by removing the activity from the work process. Examples include substitution with less hazardous chemicals, using different manufacturing processes, etc.;
  - b. Controlling the hazard at its source through use of engineering controls. Examples include local exhaust ventilation, isolation rooms, machine guarding, acoustic insulating, etc.;
  - c. Minimizing the hazard through design of safe work systems and administrative or institutional control measures. Examples include job rotation, training safe work procedures, lock-out and tag-out, workplace monitoring, limiting exposure or work duration, etc; and
  - d. Providing appropriate Personal Protective Equipment (PPE) in conjunction with training, use, and maintenance of the PPE.
132. The EHS Guidelines also require that prevention and control measures to minimize occupational hazards should be based on comprehensive Job Safety Analyses (JSA). The EHS guidelines apply to the design, construction and operation of facilities that are part of the Digital FSM.
133. All workers engaged on the Digital FSM will need to be covered under the terms of the EHS Guidelines.

## 6 POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

### 6.1. SUMMARY OF ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS

134. Given the known likely nature of the project activities, there are unlikely to be significant environmental and social impacts. Screening has identified the following potential negative environmental and social impacts of the project. In locations where fiber will be installed in road easements, these environs are already disturbed. It is anticipated that any outer island infrastructure will be located in or on government property and/or land and therefore, again, this is brownfield environment.

#### 6.1.1. Sensitive Receptors

135. Across the four States, there are likely to be sensitive receptors including schools, hospitals, churches, graves, cultural heritage sites and/or artefacts and important habitats and/or habitats for important species that may be encountered while implementing the Digital FSM Project. Prior to doing any works, an assessment of the sensitive receptors will be undertaken to ensure that the project will not in any way impact the receptor. The current alignments do not pass through any National Parks. The assessment may include for example but not limited to, discussions with community, Government, and for example, ecological surveys as required.
136. Particular attention would need to be paid to hospitals and other emergency services (police, fire stations, etc.) to ensure access is not restricted during construction works.

#### 6.1.2. Environmental Impacts

137. The environmental risks are considered minor and relate primarily to managing underground activities where they occur and waste during infrastructure installation and maintenance. The risks to the community and workers during installation and maintenance relate to health and safety disruptions to access to properties and businesses. These types of risks can be managed through effective codes of practice for the installation of infrastructure, training of workers and good supervision and oversight of mitigation measures.
138. There are a number of potential minor impacts associated with the works including but not limited to the potential erosion and sediment movement where micro-trenching is undertake and/or the installation of new poles during rainfall events. The likelihood of these impacts is low, and the impacts are considered to also be low.
139. Micro-trenching equipment can generate noise levels within and along the Digital FSM Project footprint and route. All micro-trenching will be restricted to 7am to 5pm between Monday to Saturday. The likelihood of the impacts is low, and the impacts are considered to also be minor.
140. The Digital FSM project is unlikely to result in significant waste. There may be the potential for sediment waste from digging of footings for towers. The likelihood of the impacts is low, and the impacts are considered to also be minor.
141. There is unlikely to be any significant impacts on terrestrial, aquatic and marine ecology although it is likely that there will be some vegetation clearing for both above ground and any underground works. Terrestrially, the sites are all disturbed. As such, the likelihood of any impacts is considered to slight with negligible impact. The Digital FSM Project is also unlikely to have a significant impact on marine environments. The Digital FSM Project will not construct any new structures that will reduce fish movement and/or alter existing benthic environments and moreover, will not undertake in water activities. The likelihood of the impacts is minor, and the impacts are considered to also be minor.
142. The main biological impacts will be the trimming and/or removal of vegetation. The likelihood of this is high although the impact will be low. It is critical to ensure no protected vegetation is removed.
143. Invasive species already occur across the four states. When undertaking the importation of any equipment, it will be necessary to ensure no invasive species are contained within the importation and movement of equipment between the states of equipment etc. The likelihood of these impacts is minor, and the impacts are considered to also be minor.
144. In locations where there is a need for towers to be built (for microwave or satellite connectivity) with associated power supply (such as solar panels and batteries), there may be impacts in terms of vegetation clearing. There are also the potential impacts associated with the use of vessels working within the islands and the potential for these vessels to run aground, albeit, this impact is likely to be rare.
145. The final technical design for each location has not yet been finalized. There was discussion about the potential for additional terrestrial cables in Kosrae to connect Walung. If the ongoing consultations, technical and financial considerations determine that these approaches are preferred, there would be a need for further environmental assessment of the proposed marine locations and landing areas along with easement locations for underground and/or above ground fiber.

### 6.1.3. Social Impacts

#### 6.1.3.1. Physical Infrastructure – Planning, Construction and Maintenance

146. Social risks of the physical infrastructure component are minor and relate primarily to land, influx of construction workers (approximately 10 foreign workers) within communities, community and worker health and safety during construction, public perceptions of FSM Telecom and the Open Access Entity (OAE), unequal access for disadvantaged households (including female headed and people living with disabilities), and exacerbating existing risks associated with internet usage.
147. There are some social risks that may relate to the placement of infrastructure. The siting of infrastructure may affect existing land uses such as gardens, stalls, etc., and these will need to be screened during the consultation processes and site visits. For example, on Tonoas, old concrete pads that were used for infrastructure during World War II could be repurposed for internet infrastructure, but they are currently being used by the residents for other purposes (sanitation, laundry).
148. The Digital FSM Project will provide Fiber To The Home (FTTH), which would be a significant social benefit as it increases the likelihood of access by the poorest households and is the most cost and time effective way forward. FTTH involves connecting the fiber to each individual private property (homes and businesses) where it is technically feasible to do so and where people have requested connection. All connections will be above ground. There are existing easements for utilities that allow utilities to access private land for the purposes of provision of public services, which includes the FSM Telecom and may the FSMTCC (OAE) if this new entity can be formally recognized as a utility in each state in order to ensure that the legislation for utilities can be applied. There may be some impacts to private residences or business where the services are connected, including removal of trees (food or shade), gardens including crops, fences and other minor constructions. These can mostly be avoided, and if not, discussed and agreed with landowners in writing prior to any works being undertaken.
149. The construction workforce is expected to consist of approximately 10 foreign workers, including technicians and project managers, working with local labor. Work will be carried out in isolated locations, though the duration of workers in any one place is possibly up to one month or so, however this will vary from location to location. The main risk of the influx of workers is related to harassment or violence towards community members, particularly vulnerable women and children, as they would be working at every household and premises if FTTH proceeds. However, this is also likely to bring some economic benefits in the form of additional economic spending where work is being undertaken. Given the small number of workers however, this is likely to be limited. Whilst the time on each island is likely to be small, if the work is conducted from the government field ship visiting multiple locations, the time at sea may be quite lengthy.
150. Community health and safety during construction is largely related to potential traffic risks associated with blocking off parts of roads whilst works are undertaken, as well as the risks to the community of the workers as above.
151. Worker health and safety risks are those associated with construction such as working at height and proximity to construction equipment, which is anticipated to include local workers. Identified risks have been outlined in the Labor Management Procedures (LMP).
152. For outer atolls, there is a risk of assets not being maintained or long lag times in any needed repairs if the systems fail. This could be addressed through training locals in each site on basic maintenance, repairs and troubleshooting, which also bring benefits associated with local employment opportunities (albeit limited). The FSMTCC's (OAE) business plan should also demonstrate the viability of supporting ongoing maintenance to assets in these remote locations, to ensure it is financially viable to do so. Digital Government Platform
153. In order to deliver government eServices and a portal as proposed under Component 2 of the project, a National ID system has been proposed to provide a unique legal identity to all citizens and residents of FSM and facilitate the authentication of that identity and electronic signature online. This is a voluntary initiative and existing systems will remain in place, however access to services may be reduced over time for people who choose not to participate.
154. Significant preparation would need to be undertaken to articulate the potential benefits, use, security and privacy of this system and data. Significant stakeholder engagement would be required to ensure that the community have broad and deep understanding of this proposed system, ramifications and protections, their ability to opt/in or out of the system, and potential benefits, risks and types of data to be linked to it. The Cyber Security component would address the potential risks from hacking and misuse of private information by third parties.
155. Stakeholder engagement would also be required regarding each proposed government eService under Component 2 and in developing the proposed strategic framework, including with the relevant State and National Departments to understand existing related activities. Consultation on gender mainstreaming is also needed. The project gender assessment and implications are to be undertaken as a separate process resulting in a standalone report. This should be referred to as required.

#### 6.1.3.2. Operational Impacts

156. Increased internet connectivity through the Digital FSM project will undoubtedly be beneficial for the people of FSM. Stakeholder consultations have indicated overwhelming support for the Digital FSM project, with perceived level of benefits to be extremely high. Expected benefits of the project include improved access to information, social connections to family and friends in other

locations, improved access to educational resources, banking services, opportunities for increased economic participation, access to government eServices (including the health system), increased use of internet for meetings instead of requiring physical travel, and many more. Remittances are a major source of revenue for families in FSM, and internet connectivity will make these vastly easier to access. Online purchasing has also been identified as a major benefit to individuals and businesses.

157. Social risks arising from internet access include those outlined below. Notably, these risks already exist in FSM, given fairly widespread albeit slow and limited speed access to the internet, some of the time, and in some locations; however, they would be exacerbated through the project and the number of affected people would be expected to increase. This project will increase the speed, reliability, availability of the internet, reduce costs of internet services and would be expected to result in an increase to the number of internet users and significant social benefits. However, it would also increase exposure to online risks that are experienced globally, including:
- a. Changes to culture, community, society, way of life and social discourse;
  - b. Political interference;
  - c. Scams, fraud and identify theft;
  - d. Viruses and hacking;
  - e. Access to the dark web;
  - f. Gambling and addiction;
  - g. Illegal adult content;
  - h. Revenge pornography;
  - i. Cyber bullying;
  - j. Children being exposed to violent or adult content;
  - k. Inappropriate use of social media;
  - l. Child grooming; and
  - m. Increased opportunities for human trafficking.
158. FSM citizens may be particularly appealing targets for online scams, fraud and identify theft due to their rights to work, live and study in the USA as a result of the Compact of Free Association between the USA and FSM. Given the fairly recent introduction of internet to FSM, the population currently have fairly limited understanding of these risks and are more likely to fall for scams. Identity theft is a particular risk, as it would allow people access to the USA.
159. There are also risks relating to unequal access based on gender, age or ability. Gender-based violence may be an issue, with women's groups reporting awareness of one or more instances of men denying their wives access to phones/internet over concern of affairs or neglecting domestic and childcare duties. Conversely the internet will enable more information on gender-based violence prevention, rights and access to emergency support.
160. These risks are no different in scale and nature from what is experienced world-wide in terms of internet access, and don't need to be overstated in the context of FSM or as compared to impacts already being experienced due to current connectivity. The only features that differentiate FSM are that people may be connecting to the internet for the first time, meaning they are less savvy than other users to increasingly sophisticated scams, and also the particular appeal of FSM citizens for scams due to the perception that they enable 'backdoor' access to the USA through the Compact.

## 6.2. ASSESSMENT OF ENVIRONMENTAL AND SOCIAL IMPACTS

161. Table 1 highlights the anticipated environmental and social impacts of each stage of each component of the Digital FSM Project. The final site and technology selection under Component 1 will be further developed and confirmed during project implementation, with the significant input of beneficiaries through consultations.

Parameters	Significant Potential Impacts	Mitigation Measures	Location	Timing/ Duration	Who Implements	Who Supervises
<b>COMPONENT 1 - DESIGN / PRECONSTRUCTION PHASE</b>						
<b>Physical and Ecological Environment</b>						
Component One Infrastructure Design	Planning for the construction of infrastructure and micro-trenching in sensitive environments.	Undertake appropriate due diligence during design to ensure sensitive receptors will not be impacted and incorporate this information into design. A site visit should be conducted to ensure that there are no impacts to the sensitive receptors.	Nationwide but particularly on lagoon and outer islands.	Preliminary Design.	Project Manager and FSMTCC – OAE.	CIU Safeguard Team.
<b>Socio-Economic Environment</b>						
Landowner Agreements	Landowners or occupiers may lose access to assets and / or income as a result of construction activities.	<p>Prioritize use of existing government leased lands. Where Government land is not available, the FSMTCC (OAE) should follow existing processes, particularly those in Chuuk and Kosrae with respect to the use of private land for utilities. In Yap, discussions with the relevant Councils should be undertaken to access any land.</p> <p>Any land use agreement to be negotiated voluntarily.</p> <p>Compensation for lost assets such as trees and crops.</p>	Terrestrial project sites.	During project design.	Project Manager and CIU Safeguard Team.	DoTCI and WB.
	Loss of land or access to land or structures due to installation of proposed fiber cables in Chuuk Lagoon islands without existing easements.	<p>Engage in process of obtaining permissions from clans/landowners.</p> <p>Assessment of cultural heritage impacts required for any proposed sites without existing roads or easements.</p>	Chuuk Lagoon.	During project design.	Project Manager.	DoFA CIU safeguards team

Parameters	Significant Potential Impacts	Mitigation Measures	Location	Timing/Duration	Who Implements	Who Supervises
	Loss of land or access to land or structures due to installation of proposed tower locations in Chuuk Lagoon islands.	<p>Prioritize use of existing government leased lands. Where not possible, discuss with community as to possible locations for development and enter into the appropriate land agreement.</p> <p>Confirm site selection in consultation with communities and/or landowners.</p> <p>Engage in process of obtaining permissions from clans.</p> <p>Assessment of cultural heritage impacts required for proposed sites that are not on existing government land.</p>	Chuuk Lagoon.	During project design.	Project Manager.	CIU Safeguard Team.
	Loss of land or access to land or structures due to installation of proposed fiber cables and microwave tower site in Walung community.	<p>Prioritize use of existing government leased lands for tower location – tentatively the school site.</p> <p>Engage in process of obtaining permissions in collaboration with ADB – State Government (electricity project in same area where permissions are in process of being obtained).</p> <p>Confirm site selection in consultation with communities, including considerations of cultural heritage.</p>	Kosrae, Walung.	During project design.	Project Manager.	CIU Safeguard Team.
	Loss of land or access to land or structures due to installation of proposed microwave tower site in Rumung community, Yap State.	<p>Prioritize use of existing government leased lands for tower locations on both sides.</p> <p>Confirm site selection in consultation with chiefs, Rumung Senator and landowners</p> <p>Assessment of cultural heritage impacts required for proposed sites that are not on existing government land.</p>	Rumung, Yap Proper.	During project design.	Project Manager.	CIU Safeguard Team.

Parameters	Significant Potential Impacts	Mitigation Measures	Location	Timing/Duration	Who Implements	Who Supervises
	Loss of land or access to land or structures due to installation of proposed satellite infrastructure in outer atolls.	Prioritize use of existing government buildings with power supplies.  Confirm site selection in consultation with Councils of Chiefs and/or elected officials for outer islands and landowners, including cultural heritage considerations.	Chuuk, Pohnpei and Yap.  Outer islands/atolls with over 100 people (approx. 42).	During project design.	Project Manager.	CIU Safeguard Team.
Cultural Heritage	No major impacts are foreseen as the project is intended to follow existing roadways and service provision lines or footpaths or on private land where landowners provide consent.  However, site selection will need to consider the cultural heritage value.	Any sites selected for microwave towers or other related backbone infrastructure to be assessed for cultural heritage implications in collaboration with communities / landowners before proceeding with any land permission agreements / leases.	Nationwide.	Site Selection.	CIU Safeguard Team.	Project Manager.
Community Engagement	Misconceptions regarding the project raising community concerns.	Implement the Stakeholder Engagement Plan (SEP).	Nationwide.	Throughout project implementation.	CIU Safeguard Team.	DoTCI & Project Manager.

Parameters	Significant Potential Impacts	Mitigation Measures	Location	Timing/Duration	Who Implements	Who Supervises
<b>COMPONENT 1 - CONSTRUCTION PHASE</b>						
<b>Physical and Ecological Environment</b>						
Pollution Prevention	Potential (although minor) erosion and sediment movement from sites during micro-trenching and pole installation during rainfall events.	Implement erosion drainage and sediment control measures included in the ESMP and relevant annexures.	Nationwide.	During Construction.	Contractor / CIU.	Project Manager and CIU Safeguard team.
	Impacts to water quality from sediment movement.	Implement ESMP and relevant annexures.	Nationwide.	During Construction.	Contractor / CIU.	Project Manager and CIU



Parameters	Significant Potential Impacts	Mitigation Measures	Location	Timing/ Duration	Who Implements	Who Supervises
						Safeguard Team.
	Impacts from noise during construction and micro-trenching activities.	Implement ESMP and relevant annexures. All machinery and vehicles used will be restricted to 7am to 5pm. Undertake monitoring as required.	Nationwide.	During Construction.	Contractor / CIU.	Project Manager and CIU Safeguard Team.
Biodiversity Conservation	Impacts on terrestrial, aquatic and marine ecology through clearing and other activities for Component One. The impacts are likely to be minor in nature and very localized.	Implement ESMP and relevant annexures. Undertake an assessment of any relevant sensitive receptors. Undertake visual monitoring of disturbed areas as necessary.	Nationwide.	During Construction.	Contractor / CIU.	Project Manager and CIU Safeguard Team.
<b>Socio-Economic Environment</b>						
Worker Health and Safety	Workers are harmed through not taking appropriate hazard identification and mitigation steps.	Guidelines for managing worker health and safety on site to be required from Contractors as part of the bid process and included in the contracts. Processes to be reviewed in 1-day contractor workshop.	Nationwide (main islands).	During bidding and contracting and for the duration of works.	Contractor.	Project Manager and CIU Safeguard Team.
Influx of Workers (approximately 10 foreign workers plus local labor)	Impacts are associated with personnel recruited from outside the local community such as increased instances of HIV/AIDs or tuberculosis.  Additionally, the Contractor and/or Consultants accept that gender-based violence (GBV) might occur as an unintended consequence of foreign workers taking advantage of local women or children, especially given the project involves works at the level of every household, school, hospital, business, etc.	The contractor will be responsible for ensuring that all local and foreign project staff are given and attend training for prevention of GBV and HIV/AIDS.  Project workers, project managers and the Contracting company are required to sign a code of conduct (in the bid documentation) after the training and prior to commencement of works.  Foreign workers are required to submit all required medical and police clearance certification as part of the visa application	Nationwide.	Prior to commencement of works.	Contractor / CIU.	Project Manager and CIU Safeguard Team.

Parameters	Significant Potential Impacts	Mitigation Measures	Location	Timing/Duration	Who Implements	Who Supervises
	Communities in outer atolls will be particularly at risk given their remote nature, traditional communities and workers arriving by ship for up to two weeks depending on the schedule while waiting for the return of the vessel, after potentially lengthy periods at sea moving from one outer atoll to the next.	process. No person shall be exempt from this requirement.				
Land and Assets	Minor impact to householders or small / informal businesses of assets resulting from construction works as part of FTTH,	All FTTH installations to be requested by landowners, with an opportunity provided to identify potential assets of note to be avoided.  Implement provisions of the Land access process. Contractors to evaluate each location on arrival, considering any potential impacts to landowners (including those already identified, as well as any previously unidentified items).  If any potential impacts are identified, landowners to agree in writing to the works proceeding.	Nationwide (main islands).	Pre-construction and for the duration of works.	Contractor.	Project Manager and CIU Safeguard Team.
Community Health and Safety	Communities are harmed on construction sites through hazards that are not mitigated or managed (e.g. traffic incidents).	Prepare a community health and safety plan to anticipate and minimize risks and impacts on community health and safety, and they would be contractually required to follow the ESMP.	Nationwide (main islands).	During bidding and contracting and for the duration of works.	Contractor.	Project Manager.
Access	Temporary loss of access to terrestrial facilities during trenching works.	Implement Land Access process. Provide Provision of electronic and print notices to nearby businesses, residences, community representatives or facilities to notify of construction schedule and contact person in case of inquiries.	Nationwide.	Prior to terrestrial works.	CIU Safeguard Team.	Project Manager.

Parameters	Significant Potential Impacts	Mitigation Measures	Location	Timing/ Duration	Who Implements	Who Supervises
Traffic	Disruption to traffic flow around project sites while works are underway.	A traffic management plan would need to be prepared by the Contractor and as a contract requirement. Will include issues associated with speed, vehicle maintenance etc. Contractor will be responsible for restoring any damage to property or assets. Any damage to road surface will be reported immediately to CIU.	Nationwide (main islands).	Duration of works.	Contractor.	Project Manager.
<b>COMPONENT 1 - OPERATIONS</b>						
<b>Physical and Ecological Environment</b>						
<i>No anticipated environmental impacts</i>						
<b>Socio-Economic Environment</b>						
Social Impacts	Significant potential positive impacts to communities, arising from the internet's potential to increase connection to communities and family members, access to educational resources, improved access to health information and emergency and routine care, emergency response, banking facilities, access to increase employment opportunities and tourism businesses, and a myriad of upcoming technological advantages.  Potential for social impact/s in small relatively isolated communities arising from access to internet, including illegal content, scams, and gambling etc.	Undertake activities including: a. Parental awareness raising program; b. Cyber-bullying and social media awareness raising; and c. Broad community awareness raising on scams, fraud, viruses, hacking and identify theft.	Nationwide.	Ongoing.	TRA and OAE.	Project Manager and CIU Safeguard Team.
Equal Access	Potential for low income households to be excluded from project benefits if the cost of internet connectivity is prohibitive.	A strategy for ensuring low-income households, including female-headed households, can access internet services	Nationwide.	During project design.	TRA and OAE.	Project Manager and

Parameters	Significant Potential Impacts	Mitigation Measures	Location	Timing/ Duration	Who Implements	Who Supervises
	Risk of disparate rates of internet access and use by gender, following global trend of women being less digitally connected.	needs to be developed, such as through subsidies or widespread free access points.  The Telecommunication Regulatory Authority (TRA) needs to structure a pricing model that balances sustainability and equity considerations, as part of Component 3.				CIU Safeguard Team.
Gender Based Violence	Harmful digital communication and cyber safety risks for women	Legal and regulatory framework for digital government to include consideration of GBV risks (Component 3A).	Nationwide.	Ongoing.	Project Manager	CIU Safeguard Team.
<b>COMPONENT 2, 3 AND 4</b>						
<b>Physical and Ecological Environment</b>						
<i>No anticipated environmental impacts</i>						
<b>Socio-Economic Environment</b>						
Proposed National ID system (voluntary)	Risk of data hacking and misuse by third parties (domestic or international).	Recommendations on cyber-security protections to be integrated into system design by recognized cyber-security experts.  Community consultations focused on the proposed national ID system, to identify and address community concerns.	Nationwide.	Ongoing.	Project Manager.	CIU Safeguard Team.
	Inappropriate government use of citizen data.	Establish and legislate guidelines around appropriate use of citizen data, including monitoring and enforcement.	Nationwide.	Ongoing.	Project Manager.	CIU Safeguard Team.
Digital Government	The Digital Government Strategic Framework, portal and eServices are	Ensure that the Stakeholder Engagement Plan is followed during the development	Nationwide.	Ongoing.	Project Manager.	CIU Safeguard Team.

Parameters	Significant Potential Impacts	Mitigation Measures	Location	Timing/ Duration	Who Implements	Who Supervises
	developed without appropriate community consultation, including women.	of the Framework, and that community feedback is factored into the strategy.				
Gender	The potential benefits of increased availability of ICT services may not be shared equally among men and women. Unequal access to ICT could lead to increased gender inequalities in economic opportunities and further diminish women's voice and influence in society.	Provision of support to the Gender Development Office of the National Government through Component 3D.	Nationwide.	Ongoing.	Project Manager.	CIU Safeguard Team.

Table 1 Anticipated Environmental and Social Impacts by Component and Stage of Project

## 7 ENVIRONMENTAL AND SOCIAL IMPACT MITIGATION STRATEGIES

162. This section of the ESMP identifies the key environmental and social indicators identified for the Digital FSM project and outlines respective management objectives, potential impacts, control activities and the environmental and social performance criteria against which these indicators will be evaluated (e.g. audited).
163. This section also addresses monitoring and reporting of environmental and social performance with the aim of communicating the success and failures of control procedures, distinguishing issues that require rectification and identifying measures that will allow continuous improvement in the processes by which the projects are managed.

### 7.1. INVESTMENT IDENTIFICATION, CONCEPT DESIGN AND BID DOCUMENTS

164. During infrastructure design, the CIU Safeguards Team should undertake a site visit and conduct consultations to all locations where infrastructure is proposed whether this is under subcomponent 1.1 or 1.2. By undertaking a rapid assessment, this will ensure the proposed investments can be accommodated within the footprint proposed and/or in the alternative, the proposed infrastructure can be modified / relocated so as to accommodate any potential issues identified. Where a sensitive receptor is identified then the relevant infrastructure should be relocated to ensure no impact or in the alternative, a different type of infrastructure could be selected, and otherwise the appropriate mitigation measures applied. To ensure there are no delays, this should be undertaken as early in the process as possible. Several rounds of consultation may be required in order to fully inform design.
165. It is critical that this ESMP be provided to potential contractors as part of tendering so as they can include adequate response to environmental and social risk management into their proposals. A delay in providing this ESMP could result in delays in contractual agreements being signed and/or the construction of the infrastructure.

### 7.2. LAND ACCESS

166. Under Component One, it is currently proposed that all infrastructure related to the broader network will be located with the road easements and towers will be located within government land or on government buildings such as dispensaries or schools. Where government owned or leased land is not available, and moreover, where customary or private land needs to be used for the infrastructure, land use agreements will be required which could include either a freely negotiated lease or voluntary land donation (refer to Annexure Four – Land Use Agreement Template). No land will be compulsorily acquired as part of the Digital FSM Project.
167. Given the nature of land use agreements, it will be necessary to commence the process of negotiations early to ensure that this does not delay the projects. It is not unusual for these agreements to take more than twelve months to be agreed to and as such, these should be started as a priority to ensure the project is not delayed.
168. For fiber to the home (FTTH) a process for households and businesses to request connections is needed for installation of fiber onto private land. There are legal provisions and easements in place currently that allow utilities access to private land for the purposes of public service provision in Chuuk and Kosrae, but it is to be confirmed whether fiber, installed by FSMTCC can take advantage of these legal provisions.

### 7.3. IMPACTS TO LAND ARE FURTHER DISCUSSED IN SECTION 9. SEDIMENT AND SOIL EROSION CONTROL

169. Soil erosion depends on several parameters such as type of soil, slope, vegetation, the nature of topography and rainfall intensity. The loss of soil stability and soil erosion can take place due to the removal of vegetation cover, and numerous construction activities. It can cause the loss of soil fertility and induce slope instability. Land preparation for the Digital FSM Project could result although it is unlikely, in blockage or alteration of natural flow paths causing changes in the drainage patterns in the area. Effective and efficient mitigation measures cannot only reduce but could improve the conditions over the existing conditions.
170. Activities that have the potential to cause erosion should be undertaken with the likely weather conditions in mind.

#### 7.3.1. Performance Criteria

171. The following performance criteria are set for the physical works activities:
- No discharge of sediment;
  - No build-up of sediment in the aquatic environments and/or surface and/or groundwater as a result of construction and operation activities;
  - No degradation of water quality on or off site of all physical works;

- d. All water exiting the project site and/or into groundwater systems is to have passed through best practice erosion, drainage and sediment controls; and
  - e. Effective implementation of site-specific Erosion, Drainage and Sediment Control Management Plan (EDSCP).
172. By following the management measures set out in the ESMP, construction and operation activities of the projects will not have a significant impact as a result of sedimentation across the broader area.

#### 7.3.2. Monitoring

173. The Contractors will be required to:
- a. Conduct site inspections on a weekly basis or after rainfall events exceeding 20 mm in a 24-hour period;
  - b. Develop a site-specific checklist to document non-conformances to this ESMP or any applicable EDSCPs; and
  - c. Communicate the results of inspections and/or water quality testing and ensure that any issues associated with control failures are rapidly rectified and processes are put in place to ensure that similar failures are not repeated.

#### 7.3.3. Reporting

174. All sediment and erosion control monitoring results and/or incidents will be tabulated and reported as outlined in the ESMP. The DoTCI and FSMTCC (OAE) must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to erosion and sediment control is exceeded.

Table 2 Erosion, Drainage and Sediment Control Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
E1: Loss of soil material and sedimentation to the surface and/or groundwater systems from site due to earthwork activities.	E1.1: Develop and implement an EDSCP for any surface works, embankments and excavation work, water crossings and stormwater pathways.	Pre-construction	Contractor prepare	Report to be approved by CIU prior to work starting
		Construction phase	All Contractor Personnel implement	Maintain records
	E1.2: Ensure that erosion and sediment control devices are installed, inspected and maintained as required.	Construction phase	All Contractor Personnel	Maintain records
	E1.3: Schedule/stage works to minimize cleared areas and exposed soils at all times.	Pre and during construction	Contractor	Maintain records
	E1.4: Silt fences or similar structures to be installed to protect from increased sediment loads.	During construction	Contractors	Maintain records
E2: Soil Contamination.	E2.1: If contamination is uncovered or suspected (inside the project footprints), undertake a Stage 1 preliminary site contamination investigation. The contractor should cease work if previously unidentified contamination is encountered and activate management procedures and obtain advice/permits/approval (as required).	Construction phase	All Contractor Personnel	Daily and maintain records
	E2.2: Drainage control measures to ensure runoff does not contact contaminated areas (including contaminated material within the project footprints) and is directed/diverted to stable areas for release.	Construction phase	All Contractor Personnel	Daily and maintain records
	E2.3: Avoid importing fill that may result in site contamination and lacks accompanying certification/documentation. Where fill is not available through on-site cut, it must be tested in accordance with geotechnical specifications.	Construction phase	All Contractor Personnel	Maintain records
E3. Poor maintenance of Erosion and Sediment Controls	E3.1: Regularly check and clear debris from trash racks/drain grates.	Construction and Operation phase	Contractor / DoTCI and FSMTCC	Maintain records



## 7.4. UNEXPLODED ORDINANCE (UXO)

### 7.4.1. Background

175. FSM is known to have UXO as a result of actions in WWII. While much UXO has been either cleared or used for illegal fishing, some UXO remains undiscovered.
176. Due to the materials used at the time of manufacture and the passage of time, most UXO is now corroding and in an unstable state.
177. UXO is extremely dangerous and should be treated as such. A full assessment of known UXOs within each State Government should be undertaken prior to all works. Discussions with local representatives should also be undertaken in locations where previous UXOs have been observed.

### 7.4.2. Performance Criteria

178. The following performance criteria are set for the construction of the projects:
  - a. No workers or public are exposed to UXO hazards; and
  - b. Chance UXO finds are disposed of without any injuries.

### 7.4.3. Monitoring

179. Job safety hazard analyses are to be undertaken prior to the commencement of any works. This is particularly important for any works involving earthworks. Permits are to be obtained prior to the commencement of any earthworks.
180. An excavation observer should be present throughout earthworks operations to watch for UXO as well as provide general safety support to machinery operators.
181. Management needs to comply with Table 3.

### 7.4.4. Reporting

182. Any UXO finds are to be reported to the FSMTCC -OAE and Police immediately.

Table 3 Unexploded Ordinance

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
UXO.1 Chance discovery of UXO.	UXO1.1: Undertake risk assessment prior to any works including microtrenching that could result in unearthing or disturbing UXO during construction. If risk considered high, then ensure a survey is done by qualified professionals.	Pre and during construction	All Contractor Personnel	Daily and maintain records
	UXO1.2: Ensure workers are aware of potential for UXO and of procedures to deal with it. Stop work immediately if possible UXO identified.	Pre and during construction	Contractor	Daily and maintain records
	UXO1.3 Notify authorities immediately and evacuate immediate area and surrounds as appropriate.	During construction	Contractor	Daily and maintain records

## 7.5. AIR QUALITY

### 7.5.1. Background

183. Some construction activities have the potential to cause air quality nuisance, although the types of activities being proposed by the Digital FSM Project are unlikely to have any real detrimental impact.
184. The project areas are predominantly urban, village and/or rural in character. Existing air quality reflects those environments, with dust being the main air quality nuisance albeit in the major centers, there will be limited fugitive emissions from vehicles.
185. Workers involved in construction and operation activities should be familiar with methods minimizing the impacts of deleterious air quality and alternative construction procedures as contained in FSM legislation or good international industry practice.

### 7.5.2. Performance Criteria

186. The following performance criteria are set for the construction of the projects:
  - a. Release of dust/particle matter must not cause an environmental nuisance;
  - b. Undertake measures at all times to assist in minimizing the air quality impacts associated with construction and operation activities; and
  - c. Corrective action to respond to complaints and/or grievances is to occur within 48 hours.

### 7.5.3. Monitoring

187. Observations will be made as follows:
  - a. The requirement for dust suppression will be visually observed by site personnel daily and by DoTCI and FSMTCC (OAE) when undertaking routine site inspections; and
  - b. Vehicles and machinery emissions – visual monitoring and mitigation measures implemented (such as maintenance) when deemed excessive.

### 7.5.4. Reporting

188. All air emissions observations and/or incidents will be reported as outlined in the ESMP. The DoTCI and FSMTCC (OAE) must be notified immediately in the event of any suspected instances of material or serious environmental or social harm.

Table 4 Air Quality Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
A1 Increase in dust levels at sensitive receptors.	A1.1: Implement effective dust management measures in all areas during design and construction.	Pre and during construction	All Contractor Personnel	As required and maintain records
	A1.2: Restrict speeds on roads and access tracks when works being undertaken.	During construction	Contractor	As required and maintain records
	A1.3: Manage dust/particulate matter generating activities to ensure that emissions do not cause an environmental nuisance at any sensitive locations.	During construction	Contractor	As required and maintain records
	A1.4: Construction activities should minimize risks associated with climatic events e.g. rainfall events (check forecasts).	During construction	Contractor	As required and maintain records
	A1.5: Implement scheduling/staging of proposed works to ensure no impacts from micro-trenching.	Entire construction	Contractor	As required and maintain records
	A1.6: Rubbish receptacles should be covered and located as far as practicable from sensitive locations as required.	During construction	Contractor	As required and maintain records
A2. Increase in vehicle / machinery emissions.	A2.1 Ensure any vehicles/machines are switched off when not in use.	During construction	Contractor	As required and maintain records
	A2.2 Ensure only vehicles required to undertake works are operated onsite.	During construction	Contractor	As required and maintain records
	A2.3 Ensure all construction vehicles and machinery are maintained and operated in accordance with design standards and specifications.	During construction	Contractor	As required and maintain records
	A2.4 Develop and implement an induction program for all site personnel, which includes as a minimum an outline of the minimum requirements for environmental management relating to the site.	Pre and during construction	Contractor	As required and maintain records
A3: Odor.	A3.1: Ensure waste and other potential odor sources do not cause nuisance to nearby receptors.	Operation	DoTCI and FSMTCC	As required and maintain records

## 7.6. NOISE AND VIBRATION

### 7.6.1. Background

189. Some construction and operation activities have the potential to cause noise nuisance. Blasting is not required to be undertaken as part of this project.
190. The project areas are predominantly urban, village and/or rural in character. Existing noise and vibration quality reflect those environments, with vehicle noise being the main noise quality nuisance.
191. The use of micro trenching equipment could have an adverse effect on the environment and residents if not appropriately managed.
192. Contractors involved in construction activities should be familiar with methods of controlling noisy machines and alternative construction procedures as contained within specific FSM legislation or in its absence, good international industry practice may be used if the legislation has not been enacted.
193. Potential noise sources during construction may include:
  - a. Micro-trenching equipment;
  - b. Power tools and compressors; and
  - c. Delivery vehicles;

### 7.6.2. Performance Criteria

194. The following performance criteria are set for the construction of the projects:
  - a. Noise from construction activities must not cause an environmental nuisance at any noise sensitive place;
  - b. Undertake measures at all times to assist in minimizing the noise associated with construction activities;
  - c. No damage to off-site property caused by vibration from construction activities; and
  - d. Corrective action to respond to complaints and/or grievances is to occur within 48 hours.
195. The site supervisor will:
  - a. Ensure equipment and machinery is regularly maintained and appropriately operated; and
  - b. Carry out potentially noisy construction activities during 'daytime' hours only.

### 7.6.3. Monitoring

### 7.6.4. Observation of noise mitigation measures is outlined in Table 5. Reporting

196. All noise observations and incidents will be reported as outlined in the ESMP. The DoTCI and FSMTCC –OAE must be notified immediately in the event of any suspected instances of material or serious environmental or social harm.

Table 5 Noise and Vibration Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
N1: Increased noise levels.	N1.1: Select equipment and specific design work practices to ensure that noise emissions are minimized during construction including all micro-trenching equipment.	All phases	Contractor	As required and maintain records
	N1.2: Specific noise reduction devices such as silencers and mufflers shall be installed as appropriate to equipment where possible.	Pre and during construction	Contractor	As required and maintain records
	N1.3 Minimize the need for and limit the emissions as far as practicable if noise generating construction works such as micro-trenching are to be carried out outside of the hours: 7am-5.30pm.	Construction phase	All Contractor Personnel	As required and maintain records
	N1.4: Consultation with nearby residents in advance of construction activities particularly if noise generating construction activities are to be carried out outside of 'daytime' hours: 7am-5.30pm.	Construction phase	All Contractor Personnel	As required and maintain records
	N1.5 All incidents complaints and non-compliances related to noise shall be reported in accordance with the site incident reporting procedures and summarized in the register.	Construction phase	Contractor	As required and maintain records
	N1.6 The contractor should conduct employee and operator training to improve awareness of the need to minimize excessive noise in work practices through implementation of measures.	Pre and during construction	Contractor	As required and maintain records
N2. Vibration due to construction.	N2.1: Identify properties, structures and habitat locations that will be sensitive to vibration impacts resulting from construction of the project.	Pre and during construction	CIU	As required and maintain records
	N2.2: All incidents, complaints and non-compliances related to vibration shall be reported in accordance with the site incident reporting procedures and summarized in the register.	Construction phase	Contractor	As required and maintain records

## 7.7. SURFACE WATER

### 7.7.1. Background

197. Water is a valuable resource, particularly in FSM where surface water is often limited in the smaller islands and outer atolls. Concentrated flows from works can result in the movement of sediments and other contaminants. Notwithstanding, likely to be very limited, construction activities have the potential to divert or contaminate surface water.

### 7.7.2. Performance Criteria

198. The following performance criteria are set for the construction of the projects:
- a. No significant decrease in water quality as a result of construction and operational activities;
  - b. Water quality shall conform to any approval conditions stipulated by DoTCI and FSMTCC (OAE) and/or other government departments (e.g. EPA), or in the absence of such conditions follow a 'no worsening' methodology; and
  - c. Effective implementation the EDSCPs.

### 7.7.3. Monitoring

199. Having water of a quality that is fit for purpose is important. Water quality can affect plant growth, livestock health, soil quality, farm equipment and domestic use. The quality of a water source is also variable depending upon weather and external inputs.
200. Table 6 outlines the monitoring required.

### 7.7.4. Reporting

201. All water quality observations and/or incidents will be reported as outlined in the ESMP. The DoTCI and FSMTCC (OAE) must be notified immediately in the event of any suspected instances of material or serious environmental or social harm.

Table 6 Water Quality Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
W1: Elevated suspended solids and other contaminants in surface water systems.	W1.1: Develop and implement the Erosion, Drainage and Sediment Control Plan (EDSCP) to address drainage control, sediment and erosion controls and stockpiling of materials including soil during construction of all components of the projects. EDSCP measures to be inspected regularly to ensure all devices are functioning effectively.	Pre-Earthworks	Contractor	Initial set up and then as required with reporting to DoTCI and FSMTCC
	W1.2: Designated areas for storage of fuels, oils, chemicals or other hazardous liquids should have compacted impermeable bases and be surrounded by a bund to contain any spillage. Refueling to be undertaken in areas away from water systems.	Entire construction and operation phase.	All Contractor Personnel	Weekly with reporting to DoTCI and FSMTCC
	W1.3: Conduct surface quality monitoring in location where the water quality is likely to be impacted as required.	Entire construction and operation phase.	Contractor	Weekly and as required with reporting to DoTCI and FSMTCC
	W1.4: Schedule works in stages to ensure that disturbed areas are revegetated as soon as practicable after completion of works.	Avoid undertaking bulk earthworks during wet season.	Contractor and FSMTCC	Maintain records
	W1.5: Construction materials will not be stockpiled in proximity to aquatic environment that may allow for release into the environment. Construction equipment will be removed from in proximity to the aquatic environment at the end of each working day or if heavy rainfall is predicted.	Entire construction and operation phase.	Contractor	Maintain daily records



## 7.8. TERRESTRIAL AND AQUATIC FLORA AND FAUNA

### 7.8.1. Background

202. Construction site areas are likely to be heavily disturbed and modified and therefore represent limited habitat for terrestrial flora and fauna. However, there is the potential for impacts on individual's flora such as fruit trees where they are located within the construction footprint.

### 7.8.2. Performance Criteria

203. The following performance criteria are set for the construction of the projects:
- a. Scope the route / location during the design phase and identify trees or habitats of value to people or biodiversity and define sensitive receptors to be avoided;
  - b. Identify any trees not to be removed or habitats not to be disturbed.
  - c. No clearance of vegetation outside of the designated clearing boundaries;
  - d. No deleterious impacts on aquatic environments and terrestrial habitats;
  - e. No introduction of new weed species as a result of construction activities; and
  - f. No increase in existing weed proliferation within or outside of any project footprint as a result of construction activities.

### 7.8.3. Monitoring

204. A monitoring program to observe the mitigation measures will be implemented (Table 7).
205. Weed and pest monitoring will be undertaken, and appropriate action taken in the event of alien or noxious species being identified.

### 7.8.4. Reporting

206. All flora and fauna observation results and/or incidents will be reported as outlined in the ESMP. The CIU Safeguards Team must be notified in the event of any suspected instances of death to native fauna and where vegetation is detrimentally impacted.

Table 7 Flora and Fauna Management Measures

Issue	Control Activity (and Source)	Action Timing	Responsibility	Monitoring and Reporting
FF1. Habitat loss and disturbance of fauna and flora.	FF1.1 Limit vegetation clearing and minimize habitat disturbance through adequate protection and management of retained vegetation.	During construction	Contractor	Daily and maintain records
	FF1.2: Minimize noise levels and lighting intrusion throughout construction in the vicinity of any sensitive locations.	During construction	Contractor	Daily and maintain records
	FF1.3: Ensure that all site personnel are made aware of sensitive fauna/habitat areas and the requirements for the protection of these areas.	During construction	Contractor	Daily and maintain records
	FF1.4 Minimize disturbance to on-site fauna and recover and rescue any injured or orphaned fauna during construction.	During construction	Contractor	Daily and maintain records, report
	FF1.5 Minimize the impacts to individual's flora and provide compensation where that is not practicable. Where not possible, investigate the potential to alter the design alignment	During construction	Contractor	Daily and maintain records, report
FF2. Introduced flora and weed species.	FF2.1: Implement an ESCP to reduce the spread of weeds through erosion and sediment entering any waterways and therefore spreading.	Pre and during construction	Contractor	Maintain records
	FF2.2: Revegetate disturbed areas using native and locally endemic species that have high habitat value.	During construction	Contractor	As required and maintain records
	FF2.3: Minimize disturbance to mature remnant vegetation, particularly canopy trees.	During construction	Contractor	Daily and maintain records
	FF2.4: Environmental weeds and pests within the project footprints shall be controlled.	Operation	Contractor	Maintain records

## 7.9. SOCIAL IMPACT MANAGEMENT

### 7.9.1. Background

207. Affordable, high-speed Internet is known to be associated with economic and social empowerment by increasing users' access to services such as employment and education opportunities and health.
208. None the less, construction activities can have a negative impact on communities if not managed appropriately.

### 7.9.2. Performance Criteria

209. The following performance criteria are set for the project:
- a. The project design should be evaluated prior to procurement to ensure that the technology platform is the appropriate technology at that point in time (e.g. "last mile" of fiber to the home may have been superseded by 5G or other wireless platforms from FTTN by the time of the project approvals process has completed);
  - b. The community has been consulted and project elements have been designed with their informed consultation and participation throughout the project;
  - c. The community has been consulted on the proposed National ID system, government portal and government eServices, with demonstrable majority support for the proposal, or options for people to voluntarily opt in or out without disadvantage (beyond that delivered by the system itself);
  - d. All stakeholders are appropriately represented, including women, youth, people living with disabilities, remote communities and other vulnerable groups;
  - e. Suitable community awareness raising has been delivered through the project to inform the general population, as well as specific target groups (youth, parents) of the risks of the internet and available options to manage those risks;
  - f. Avoid adverse impacts to local community during construction and operations and where not possible, minimize, restore or compensate for these impacts;
  - g. Community health and safety is protected, and overall well-being benefits derived from the project, including traffic management, access considerations during construction, community safety around construction sites and management of the influx of workers; and
  - h. Complaint and grievance mechanisms are put in place and proactively managed.
210. Suitable steps have been taken by the Regulator (through Component 3C) to promote affordable internet services for all, including:
- a. Assessment and recommendations regarding subsidies for low income households;
  - b. Suitable pricing models for all users; and
  - c. Support of competition in the telecommunications retail sector.
211. Consultation with stakeholders will continue. This will help ensure that stakeholders continue to be aware of the project, its progress and any changes in the project. It will also assist in identifying any issues as they arise.
212. The DoTCI and FSMTCC (OAE) will be responsible for advisory support and extensions services to local beneficiaries along with being responsible for distributing material inputs and providing technical training and backstopping in the implementation of program activities.

### 7.9.3. Reporting

213. Records of all consultations are to be kept and reported on a six-monthly basis.
214. The DoTCI and FSMTCC (OAE) must be notified in the event of any individual or community complaint or dissatisfaction and ensure the Grievance Mechanism is complied with.

Table 8 Social Management and Population Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
SM1: Community Consultation.	SM1.1: Carry out community engagement to consult and inform the community regarding the project as per the SEP, including on the purpose and benefits of making changes to land use. Agree on technology and location of physical works.	Design phase and pre-construction phase	The DoTCI and FSMTCC (OAE)	Maintain records
	SM1.2: Agree land owner and land occupier consent for change of land use including suitable mitigation measures.	Design phase	The DoTCI and FSMTCC (OAE)	Maintain records
	SM1.3: Implement Grievance Mechanism (GM) process.	Entire construction and operation phase.	The DoTCI and FSMTCC (OAE)	Maintain records
SM2: Public nuisance caused by construction/operation activities (e.g. noise, dust etc).	SM2.1: Carry out community consultation prior to undertaking activities as per SEP.	Pre-construction	The DoTCI and FSMTCC (OAE)	Maintain records
	SM2.2: Implement appropriate management plans (refer to Noise, Air, ESCP, and Waste sections of the ESMP).	Construction and operation	Contractor	Daily and maintain records
SM3: Self Selection for FTTH.	SM3.1: Carry out community engagement to consult and inform the community regarding the project as per the SEP, including on the process for households and businesses to formally request FTTH.	Pre-construction	The DoTCI and FSMTCC (OAE)	Maintain records
	SM3.2: Maintain a register of all requests made for FTTH in each state, including owner identified sensitive items (assets, shade trees, crops, fences, etc.) to be avoided during installation and acknowledgement that no compensation is to be provided.	Pre-construction	The DoTCI and FSMTCC (OAE)	Maintain records

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
SM3: Self Selection for FTTH.	SM3.4: Ensure landowners and occupiers are informed in advance of approximate installation schedule and when workers may be on site	Construction	Contractors	Maintain records
	SM3.5: Implement the Grievance Mechanism (GM) process.	Entire construction and operation phase.	The DoTCI and FSMTCC (OAE) and Contractor	Maintain records
SM4: International Workers.	SM4.1 Ensure that all local and foreign project staff attend training for prevention of GBV and HIV/AIDS.	Pre and during construction	Contractor	Maintain records
	SM4.2 Project workers, project managers and the Contracting company are required to sign a code of conduct (in the bid documentation) after the training and prior to commencement of works.	Pre and during construction	Contractor	Maintain records
	SM4.3 Foreign workers are required to submit all required medical and police clearance certification as part of the visa application process. No person shall be exempt from this requirement.	Pre and during construction	Contractor	Maintain records
SM5: Community Health and Safety.	SM5.1 Implement Community Health and Safety Plan Contractors would be contractually required to follow the ESMP.	Pre-construction	Contractor	Maintain records
	SM5.2 Conduct a 1-day ESMP training workshop for Contractor on contract award to review ESMP implementation, mitigations, monitoring and responsibilities.	Pre-construction	CIU	Maintain records
	SM5.3 Processes to be reviewed in 1-day Contractor workshop.	Pre-construction	Contractor	Maintain records
	SM5.4 Inform community of construction works that may impact access, including electronic and print notices to nearby businesses, residences or facilities to notify of construction schedule and contact person.	Pre and during construction	Contractor	Maintain records
SM6: Traffic Safety During Construction.	SM6.1 Where appropriate employ traffic control measures on the road to prevent traffic accidents. The workers shall have the relevant training and safety equipment.	Pre and during construction	Contractor	Maintain records

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
SM6: Traffic Safety During Construction.	SM6.2 A traffic management plan would need to be prepared by the Contractor and a contract requirement addressing speed, vehicle maintenance, and measures to address any damage caused.	Pre-construction	Contractor	Maintain records
SM7: Risks of Internet Access.	SM7.1 Recommendations on cyber-security protections to be integrated into system design by recognized cyber-security experts.	Design	DoTCI	Maintain records
	SM7.2 Community consultations focused on the proposed national ID system and other digital government components to identify and address community concerns.	Life of Project	DoTCI	Maintain records
	SM7.3 Establish and legislate guidelines around appropriate use of citizen data, including monitoring and enforcement.	Life of Project	DoTCI	Maintain records
SM8: Equal Access to Project Benefits.	SM8.1 A strategy for ensuring low-income households can access internet services needs to be developed, such as through subsidies or widespread free access points (under Component 3C).	Implementation of Component Three	FSMTCC (OAE) and TRA	Maintain records
	SM8.2 The Telecommunication Regulatory Authority (TRA) needs to structure a pricing model that balances sustainability and equity considerations (under Component 3C).	Implementation of Component Three	FSMTCC (OAE) and TRA	Maintain records

## 7.10. LAND OWNERSHIP AND CUSTOMARY TENURE

### 7.10.1. Background

- 215. FSM has complex arrangements with respect to land ownership and customary tenure.
- 216. All stakeholders, including the communities are entitled to be fully informed about the project and engaged in technology and site selection as relevant. No person should be resettled from their land as a consequence of this work.
- 217. Fiber To The Home (FTTH) may be some impacts to private residences or business where the services are connected above or below (less likely) ground. These could include the removal of trees (food or shade), gardens including crops, fences and other minor constructions.
- 218. Sites to be selected under the project to host microwave towers and other related backbone infrastructure need to be selected in collaboration with communities and landowners, and to consider cultural heritage implications. No land will be involuntarily taken. Land can be formally donated, leased or purchased through lease or land use agreements. In some cases, land may need to be granted under easement arrangements from traditional owners where existing government land is not an option.

### 7.10.2. Performance Criteria

- 219. The following performance criteria are set for the project:
  - a. The community has been consulted and project elements have been designed with their informed consultation and participation throughout the project;
  - b. Any land required to be donated and formally recorded to the project has been done through a lease or land use agreement signed by the appropriate community members;
  - c. Avoid adverse impacts to local community and land during construction and where not possible, minimize, restore or compensate for these impacts, which should be described in the land access process;
  - d. Complaint and grievance mechanisms are put in place and proactively managed; and
  - e. Long-term social benefits are achieved.
- 220. Consultation with stakeholders will be undertaken throughout the life of the project as described in the SEP
- 221. The DoTCI and FSMTCC (OAE) will be responsible for advisory support and extensions services to local beneficiaries along with being responsible for distributing material inputs and providing technical training and backstopping in the implementation of activities.

### 7.10.3. Reporting

- 222. Records of all consultations are to be kept and reported on monthly basis.
- 223. The DoTCI and FSMTCC (OAE) must be notified in the event of any individual or community complaint or dissatisfaction and ensure the GRM is complied with.

Table 9 Land Ownership Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
LO1: Ensure no impact on Land Ownership.	LO1.1: Carry out community consultation and with relevant Councils on the purpose and benefits of making changes to land use for the main fiber cable as per the RPF.	Pre-construction	The DoTCI and FSMTCC (OAE)	Maintain records
	LO1.2: Ensure all works are carried out within the existing footprint of the road easement or other Government-leased land (where possible) as per the Land Access process.	Pre-construction	The DoTCI and FSMTCC (OAE)	Maintain records
	LO1.3: Implement the SEP and GRM process.	Entire construction and operation phase	The DoTCI and FSMTCC (OAE)	Maintain records
	LO1.4: Any land use agreement needed is to be negotiated voluntarily as per the Land Access process.	Pre-construction	The DoTCI and FSMTCC (OAE)	Maintain records
	LO1.5: Identify suitable opportunities to work in collaboration with other projects to reduce the complexity for land negotiations (e.g. ADB energy project in Walung, ADB water supply project in Weno, World Bank energy project in Chuuk lagoon, and possible World Bank roads in Tonoas).	Design phase / ongoing	The DoTCI and FSMTCC (OAE)	Maintain records
	LO1.6: Priority for land used by contractors to store equipment on during construction is to be given to government land. Where this is not possible, land access is to be negotiated with landowners in accordance with the land access process. Land is to be restored to its pre-project condition or better before contractors leave..	Pre-construction	Contractors	Maintain records
	LO1.7 FSMTCC (OAE) to be formally recognized as a utility in each state, such that easement provisions for utilities are able to be applied through the relevant agreement compliant with each state Legislature.	Design phase	FSMTCC (OAE) and States	Maintain records
LO2: Consent for Fiber to the Home	LO2.1: Carry out community consultation and with relevant Councils, State Government Departments and representatives of businesses, schools, hospitals, and others on the purpose and benefits of FTTH, as per the RPF.	Pre-construction	The DoTCI and FSMTCC (OAE)	Maintain records
	LO2.2: Obtain written requests from households and businesses for FTTH installations, noting any specific sensitive areas (graves or other culturally	Pre-construction	DoTCI, FSMTCC (OAE), Dep. of Land	Maintain records



significant areas, trees, crops, fences, etc.) from the householder’s perspective that need to be avoided

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
LO2: Consent for Fiber to the Home	LO2.3: For properties without formal title, consult with local community to establish permission for FTTH to be installed.	Pre-construction	DoTCI, FSMTCC (OAE), Dep. of Land	Maintain records
	LO2.4: Construction workers to assess the installation at each location to identify and avoid impacts to assets such as trees, shade, crops, fences, graves, fences, gardens and others that may be identified on each site. In the event of any unavoidable impacts, written permission to proceed with the installation noting the impact is required before works commence. Ensure that any cultural heritage (e.g. graves, other culturally significant areas) are protected during construction	Construction	Contractor	Maintain records

## 7.11. CULTURAL HERITAGE

### 7.11.1. Background

224. All stakeholders, including the communities are entitled to be fully informed about the project and engaged in technology and site selection as relevant. Cultural heritage sites will be identified during consultation and will be avoided in design and installation of physical infrastructure.
225. For Fiber To The Home (FTTH) there is the potential for graves to be disturbed if new poles are required.
226. Sites to be selected under the project to host microwave towers and other related backbone infrastructure need to be selected in collaboration with communities and landowners, and to consider cultural heritage implications.

### 7.11.2. Performance Criteria

227. The following performance criteria are set for the project:
  - a. The Division of Historic Preservation are consulted on proposed locations for towers such that potential locations of intangible cultural heritage have been identified;
  - b. The community has been consulted and project elements have been designed to avoid impacts on cultural heritage;
  - c. Cultural heritage is not adversely impacted; and
228. Chance find procedures are operationalized. Consultation with stakeholders will continue. This will help ensure that stakeholders continue to be aware of the project, its progress and any changes in the project. It will also assist in identifying any cultural heritage values and potential issues as they arise.

### 7.11.3. Reporting

229. Records of all consultations are to be kept and reported on monthly basis.
230. The DoTCI and FSMTCC (OAE) must be notified in the event of any individual or community complaint or dissatisfaction and ensure the GM is complied with.

Table 10 Cultural Heritage Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
CH1: Damage or disturbance to significant important Archaeological, Indigenous and/or Cultural Heritage during the earth disturbances and land clearing activities	<p>CH1.1: All sites should be evaluated for potential cultural heritage significance, including in consultation with communities and landowners. If areas are identified what the process should be to avoid damage / desecration, including graves.</p> <p>CH1.2: Should any important Archaeological, Indigenous and/or Cultural Heritage sites be discovered be uncovered through a 'chance find', immediately cease work within the area that the site has been observed and consult with the relevant Museum/traditional owner groups, DoTCI, FSMTCC (OAE) and archaeologist available for implementation during construction.</p>	<p>Design phase</p> <p>Pre and during construction</p>	<p>CIU</p> <p>Contractor</p>	<p>Maintain records</p> <p>Daily, maintain records and immediately notify DoTCI, FSMTCC and EPA of any find</p>

## 7.12. GENDER AND GENDER BASED VIOLENCE

### 7.12.1. Background

231. Affordable, high-speed Internet is known to be associated with economic and social empowerment by increasing users' access to services such as employment and education opportunities and health. Access to ICT can enable women and men to gain a stronger voice in their communities, their Government and at the global level. ICT also offers women flexibility in time and space and can be of particular value to women to access information of importance to their productive, reproductive and community activities and to obtain additional resources and skills.
232. However, analysis also shows that while Government has been engaging on gender issues, including within the ICT sector, initiatives are not well coordinated with other agencies engaged on gender issues, especially on Health and Education, or integrated with the gender engagement strategies and policies currently under development by Government. This presents a risk if the potential benefits of increased availability of ICT services are not shared equally among men and women or if new digital policies are developed without adequate consultation of all stakeholders including women. In the case of women's unequal access to participate in governance or leadership or engage in productive sectors, unequal access to ICT could lead to increased gender inequalities in economic opportunities and further diminish women's voice and influence in society.
233. Young women in FSM are acutely vulnerable to GBV and coercion/trafficking. Rates of GBV are high, with one in three women (32.8 per cent) experiencing physical and/or sexual violence by a partner<sup>4</sup>. Furthermore, 8 per cent of women have experience sexual abuse by someone other than a partner<sup>5</sup>. Annexure Four – Gender Assessment – has identified specific project activities related to mitigating potential gender and GBV impacts.

### 7.12.2. Performance Criteria

234. The following performance criteria are set for the project:
- a. Manage the labor workforce to avoid behavior that could lead to gender based violence or involvement in illegal behavior, including that the Contractor Code of Conduct (Annexure Ten) is signed by all workers;
  - b. Awareness raising on the risks and issues associated with the internet is provided in collaboration with women and youth groups;
  - c. Sex-disaggregated statistics are collected around telecommunications subscriptions, access and use;
  - d. A bill has been proposed for passage that legislates against harmful digital communication, including online GBV;
  - e. A cybersecurity policy framework has been developed including gender-sensitive considerations and public awareness sessions have been held; and
  - f. Consultants on the National ID system and government eServices have been inclusive of women's groups, and their concerns are reflected in the final system design to ensure improved access to services for women.
235. The FSM Department of Justice (DoJ) and DoTCI will be responsible for advisory support and extensions services to local beneficiaries along with being responsible for distributing material inputs and providing technical training and backstopping in the implementation of activities.

### 7.12.3. Reporting

236. Records of all consultations/reports/incidents are to be kept and reported on monthly basis.
237. The FSM Department of Justice (DoJ) and FSMTCC (OAE) must be notified in the event of any individual or community report.

<sup>4</sup> FSM Department of Health and Social Affairs (2014), Federated States of Micronesia Family Health and Safety Study: A prevalence study on violence against women.

<sup>5</sup> Ibid.

Table 11: Gender and GBV Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
GE1: Gender Equality.		Entire construction and operation phase	DoTCI and FSMTCC (OAE)	Maintain records
	GE1.2: Implement LMP including policies of non-discrimination and equal opportunity.	Entire construction and operation phase	DoTCI and FSMTCC (OAE)	Maintain records
E2: Gender based violence.	GE2.1: Raise community awareness of appropriate worker behavior; share content of Code of Conduct and information on grievance process.	Entire construction and operation phase	DoTCI and FSMTCC (OAE)	Maintain records
	GE2.2: Contractor to ensure the behaviors of their project worker in relation to the local communities and their social sensitivities is adequate and that all managers and workers have signed the appropriate Code of Conduct as per Annexure ten. This is to avoid creating demand for illegal sex work, avoid gender-based violence and violence against children, manage alcohol consumption and avoid the use of illegal substances, and abide by cultural and social norms of the host community.	Construction	Contractor	Maintain records
	GE2.3 Ensure that all overseas project staff undergo a cultural familiarization session as part of their induction training. The purpose of this induction will be to introduce the project staff to the cultural sensitivities of the local communities and the expected behaviors of the staff in their interactions with these communities. Gender based violence, HIV Aids and communicable disease awareness raising, etc. shall be provided to all workers. DoTCI and FSMTCC (OAE) shall provide to the Contractor a list of approved service providers, which shall include recognized NGOs and others for conducting this training.	Construction	Contractor	Maintain records

## 7.13. WASTE MANAGEMENT

### 7.13.1. Background

238. As the implementing agency, the DoTCI and FSMTCC (OAE) aim to advocate good waste management practice, although implementation can be challenging. The preferred waste management hierarchy and principles for achieving good waste management is as follows:
- a. Waste avoidance (avoid using unnecessary material on the projects);
  - b. Waste re-use (re-use material and reduce disposing);
  - c. Waste recycling (recycle material such as cans, bottles, etc.); and
  - d. Solid and hazardous waste disposal (all putrescible and/or contaminated waste to be disposed at a licensed and engineered landfill).
239. The key waste streams generated during construction are likely to include residual sediment and construction wastes such as:
- a. The excavation wastes (soil, concrete, asphalt) unsuitable for reuse during micro-trenching;
  - b. Wastes from construction equipment maintenance. Micro-trenching equipment will be utilized for the duration of the construction phase for below ground works. Liquid hazardous wastes from cleaning, repairing and maintenance of this equipment may be generated. Likewise, leakage or spillage of fuels/oils within the site needs to be managed and disposed of appropriately;
  - c. Non-hazardous liquid wastes will be generated through the use of workers' facilities such as toilets; and
  - d. General wastes including scrap materials and biodegradable wastes.
240. Workers involved in construction and operational activities should be familiar with methods minimizing the impacts of clearing vegetation to minimize the footprint to that essential for the works and rehabilitate disturbed areas. By doing these activities, the projects should minimize the impact of waste generated by the project.

### 7.13.2. Performance Criteria

241. The following performance criteria are set for the construction of the projects:
- a. Waste generation is minimized through the implementation of the waste hierarchy (avoidance, reduce, reuse, recycle);
  - b. No litter will be observed within the project area or surrounds as a result of activities by site personnel;
  - c. No complaints received regarding waste generation and management;
  - d. Any waste from on-site portable sanitary facilities will be sent off site for disposal by a waste licensed contractor; and
  - e. Waste oils must be removed by the contractor for recycling.

### 7.13.3. Monitoring

242. A supervision program has been developed for the projects (Table 12). The program is subject to review and update at least every two months from the date of issue.

### 7.13.4. Reporting

243. The DoTCI and FSMTCC (OAE) as implementing agencies must be notified immediately in the event of any suspected instances of material or serious environmental or social harm, or if a determined level with respect to waste is exceeded.

Table 12 Waste Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
WT1: Production of wastes and excessive use of resources.	WT1.1: Preference shall be given to materials that can be used to construct the project that would reduce the direct and indirect waste generated.	Pre and during construction	Contractor	Maintain records
	WT1.2: Daily waste practices shall be carried out unless these are delegated to the activities of external waste management bodies.	During construction	Contractor	Daily and maintain records
	WT1.3: The use of construction materials shall be optimized and where possible a recycling policy adopted.	During construction	Contractor	Weekly and maintain records
	WT1.4: Separate waste streams shall be maintained at all times i.e. general domestic waste, construction and contaminated waste. Specific areas on site shall be designated for the temporary management of the various waste streams.	During construction	Contractor	Weekly and maintain records
	WT1.5: Any contaminated waste shall be disposed of at an approved facility.	During construction	Contractor	Weekly and maintain records
	WT1.6: Recyclable waste (including oil and some construction waste) shall be collected separately and disposed of correctly e.g. transported to an appropriate waste oil receiving station and/or licensed waste facility.	During construction	Contractor	Weekly and maintain records
	WT1.7: Waste sites shall be sufficiently covered to ensure that wildlife does not have access.	During construction	Contractor	Daily
	WT1.8: Disposal of waste shall be carried out in accordance with the FSM requirements. Any waste that cannot be disposed safely in FSM landfills must be exported for disposal in an engineered and licensed facility, with relevant export/import approvals.	During construction	Contractor	Weekly and maintain records
	WT1.9: Fuel and lubricant leakages from vehicles and plant shall be immediately rectified.	During construction	Contractor	Daily and maintain records
WM2: Management and disposal of waste.	WM2.1: Develop and implement a Waste Management Plan (WMP).	Pre-construction	Contractor	Maintain records

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
WM2: Management and disposal of waste.	WM2.2: Provide covered bins for use by both staff and visitors.	All phases	Contractor,	Weekly
	WM2.3: Where possible, all solid waste is recycled and where not possible, is disposed at a licensed and engineered landfill, with appropriate permits and approvals under international treaties such as Waigani.	During construction	Contractor	Weekly and maintain records
	WM2.4: Any non-hazardous or contaminated waste shall be disposed of at an approved facility at a licensed and engineered landfill, with appropriate permits and approvals under international treaties such as Waigani. All hazardous waste must be exported for recycling/disposal at licensed facilities.	All phases	Contractor,	Weekly and maintain records
	WT2.5: Fuel and lubricant leakages from vehicles and plant shall be immediately rectified.	All phases	Contractor,	Daily and maintain records
WM3: Contaminated Waste.	WM3.1 Develop a Contaminated Waste Management Plan.	Pre-construction	Contractor,	Maintain records



## 7.14. EMERGENCY MANAGEMENT MEASURES

244. In the event of actions occurring, which may result in serious health, safety and environmental (catastrophic) damage, emergency response or contingency actions will be implemented as soon as possible to limit the extent of environmental damage.
245. The delivery organization will need to incorporate emergency responses into the project complying with the requirements under the Occupational, Health and Safety Policy of the delivery organization and the relevant FSM legislation.

### 7.14.1. Performance Criteria

246. The following performance criteria are set for the construction phase of the projects:
  - a. No incident of fire outbreak;
  - b. No failure of water retaining structures;
  - c. No major chemical or fuel spills;
  - d. No preventable industrial or work-related accidents;
  - e. Provide an immediate and effective response to incidents that represent a risk to public health, safety or the environment; and
  - f. Minimize environmental harm due to unforeseen incidents.

### 7.14.2. Monitoring

247. An emergency response monitoring program has been developed for the projects (Table 13). The program is subject to review and update at least every two months from the date of issue. Importantly, visual inspections will be conducted by Contractor daily with reporting to DoTCI and FSMTCC (OAE) staff on a weekly basis (minimum) noting any non-conformances to this ESMP.

### 7.14.3. Reporting

248. The DoTCI and FSMTCC (OAE) staff must be notified immediately in the event of any emergency, including fire or health related matter including those that have resulted in serious environmental harm.

Table 13 Emergency Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Monitoring & reporting
E1. Fire and Emergency management and prevention strategies implemented.	E1.1: Flammable and combustible liquids bunding/storage areas to be designed in accordance with appropriate international standards.	Pre and during construction	Contractor	Daily and maintain records
	E1.2: Fire extinguishers are to be available on site, portable as required.	During construction	Contractor	Daily and maintain records
	E1.3: No open fires are permitted within the project area/s.	During construction	Contractor	Daily and maintain records
	E1.4: Communication equipment and emergency protocols to be established prior to commencement of construction activities.	During construction	Contractor	Daily and maintain records
	E1.5: Train all staff in emergency preparedness and response (cover health and safety at the work site).	During construction	Contractor	Daily and maintain records
	E1.6: Check and replenish First Aid Kits.	During construction	Contractor	Daily and maintain records
	E1.7: Use of Personal Protection Equipment (PPE).	During construction	All Contractor Personnel	Daily and maintain records

## 8 LABOR MANAGEMENT PROCEDURES

249. Labor Management Procedures (LMP) are mandated by ESS2 – Labor and Working Conditions of the World Bank Environmental and Social Framework to identify the main labor requirements and risks associated with the project and to determine the resources necessary to address project labor issues. The LMP is a living document to be reviewed and updated throughout development and implementation of the project. The LMP applies to all project workers, irrespective of contract being full-time, part-time, temporary or casual.

250. According to the ESF, worker types are defined as:

**Direct workers** - people employed or engaged directly by the Borrower (including the project proponent and the project implementing agencies) to work specifically in relation to the project

**Contracted workers** - people employed or engaged through third parties to perform work related to core functions of the project, regardless of location. These could be either international or local workers.

**Primary supply workers** - people employed or engaged by the Borrower's primary suppliers<sup>5</sup> (primary supply workers);

**Community workers** - people employed or engaged in providing community labor, generally voluntarily. There will be no community workers engaged on the Project.

**Civil Servant**- those employed directly by the Government. Overview of Labor Use on the Project

251. This section describes the expected labor use on the project, based on available information. As the project progresses and more information becomes available, this information will be revised. Migrant workers are not expected as a result of this project.

Project Component	Number of Project Workers	Characteristics of Project Workers	Timing of Labor Requirements	Contracted Workers
Component 1: Improving National Connectivity				
Subcomponent 1.1. Improving national connectivity.  Deployment of domestic fiber optic and wireless networks and other related backbone infrastructure to the "main island/atoll" in each of the four states.	Approx. 10 contracted workers (likely to be from outside FSM) at any one time / location, as well as up to 10 local workers.	National and international contractors are expected to undertake the lead on construction works. Supply chain and implementation unit contractors will also be required  Local workers will be used wherever possible for labor in each location.  International consultancy firms for design work  All workers engaged will be over 18 years of age.	Design and Construction Phase	Works are likely to be tendered to a private firm.  Number of contracted and sub-contracted workers is unknown at this stage.
Subcomponent 1.2. Bridging the connectivity gap for outer islands.  4G LTE base stations and satellite connectivity for outer atolls in Yap, Chuuk	Approx. 4-5 direct or contracted workers.	National and international contractors are expected to undertake the lead on construction works.  Local labor will be used wherever	Construction Phase	Private sector operators (through a PPP structure) will undertake physical works and ongoing maintenance.  Number of contracted workers is unknown at

and Pohnpei states.		possible for labor in each location and will be trained in maintenance.		this stage.
Components 2, 3 and 4				
Technical Assistance	Approx. 6-10 direct or contracted workers	Combination of International and local consultants.	Project preparation and implementation	Unknown at this stage.

## 8.1. ASSESSMENT OF KEY POTENTIAL LABOR RISKS

### 8.1.1. Project Activities and Key Labor Risks

252. The key labor risks that have been identified associated with the project activities include Occupational Health and Safety (OHS) due to potentially hazardous work environments; lack of equal opportunities for all due to cultural employment perceptions; and acceptable working conditions. Based on current conditions it is assessed that the risk of child or forced labor is negligible.
253. Component 1 of the project involves physical works, whilst the remaining components are technical assistance activities.

Project Component	Activities	Key Labor Risks
Subcomponent 1.1. Improving national connectivity.	<p>Deployment of domestic fiber optic and other related backbone infrastructure to the "main island/atoll" in each of the four states.</p> <p>Underground cables where feasible.</p> <p>Overground cables where underground is not feasible.</p> <p>Wireless network infrastructure, including telecommunication towers and poles.</p> <p>May involve installation of Fiber To The Home (FTTH), in which case there would be interaction with every household that has requested a connection.</p>	<p>OHS, including</p> <ul style="list-style-type: none"> <li>a. Operating machinery;</li> <li>b. ;</li> <li>c. Working at heights'</li> <li>d. Working on road edges and traffic management hazards; and</li> <li>e. Electrical hazards.</li> </ul> <p>Working in remote communities and potentially at the household and village level (including areas requiring permission to visit, normally may be closed communities).</p> <p>Potential for issues within some communities (e.g. Chuuk Lagoon Islands).</p> <p>Air travel to each state and boat travel within each state.</p> <p>Exposure to heat, diseases and illnesses.</p>
Subcomponent 1.2. Bridging the connectivity gap for outer islands.	4G LTE base stations and satellite connectivity for outer atolls in Yap, Chuuk and Pohnpei states.	<p>OHS, including:</p> <ul style="list-style-type: none"> <li>a. Transport by sea vessels (ship and boats); and</li> <li>b. Working at heights.</li> </ul>
Components 2, 3 and 4	<p>Desktop work.</p> <p>Stakeholder engagement in each state.</p>	<p>OHS, including:</p> <ul style="list-style-type: none"> <li>a. Air travel to each state;</li> <li>b. Boat travel within each state; and</li> </ul>

		c. Sedentary work.
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## 8.2. OVERVIEW OF THE LABOR LEGISLATION: TERMS AND CONDITIONS

254. FSM has national legislation that outlines worker's rights. The Labor Code (last updated in 2014) outlines hiring of non-resident workers, labor development, and other requirements<sup>6</sup>. The Code requires:
- a. Non-resident workers to obtain health certificates, and have a minimum of two years of related work experience;
  - b. Any benefits provided to non-resident construction workers, such as housing, transport, etc. will also be provided to any national contractor who is required to leave their principle place of residence for work;
  - c. Applications for foreign workers are needed, unless the foreign workers will be in the country less than 90 days; and
  - d. Minimum employment conditions outlined in the Code apply to all foreign workers.

**1. Workers' Rights in FSM**

2. **Freedom of Association and the Right to Collective Bargaining.** Although the law does not specifically provide for the right of workers to join a union, under the constitution citizens have the right to form or join associations, and national government employees by law can form associations to "present their views" to the government without being subject to coercion, discrimination, or reprisals. No workers, including foreign workers, were prohibited from joining unions, but for a variety of reasons--including that most private-sector employment was in small-scale, family-owned businesses and the majority of the remaining working-age population was engaged in subsistence farming and fishing--there were no unions. No law deals specifically with trade unions or with the right to collective bargaining. There is no specific right to strike, but no law prohibits strikes.
3. **Prohibition of Forced or Compulsory Labor.** The constitution prohibits forced or compulsory labor.
4. **Prohibition of Child Labor and Minimum Age for Employment.** National and state laws do not establish a minimum age for employment of children.
5. **Acceptable Conditions of Work.** The minimum hourly wage for employment with the national government was \$2.65. All states had a minimum hourly wage for government workers: \$2.00 in Pohnpei, \$1.25 in Chuuk, \$1.42 in Kosrae, and \$1.60 in Yap. Only Pohnpei had a minimum wage for private sector workers: \$1.35 per hour. National law sets a standard of an eight hour/five day workweek, with premium pay for overtime. A federal regulation requires that employers provide a safe workplace. No law for either the public or private sector permits workers to remove themselves from dangerous work situations without jeopardy to their continued employment.
6. *Source: Country Reports on Human Rights Practices for 2011, United States Department of State*

## 8.3. OVERVIEW OF THE LABOR LEGISLATION: OCCUPATIONAL HEALTH AND SAFETY

255. There is minimal legislation related to Occupational Health and Safety (OHS). The Public Employment Code (2014) requires that workers exposed to hazardous working conditions are paid 25% more<sup>7</sup>. The project is not likely to expose workers to hazardous working conditions.
256. The FSM Government has enacted the Labor Code and Public Employment Code 2014. There is limited information contained within the two Codes that would compare to the World Bank Environmental and Social Framework Environmental and Social Standards. Notwithstanding, the existing laws provide some response to the requirements. This ESMP will follow the requirements of ESS2.

## 8.4. RESPONSIBLE STAFF

257. This section identifies the functions and/or individuals within the project responsible for oversight mechanisms.

<sup>6</sup> [http://www.pacii.org/cgi-bin/sinodisp/fm/legis/consol\\_act/l43/l43.html?stem=&synonyms=&query=minimum%20wage#disp2](http://www.pacii.org/cgi-bin/sinodisp/fm/legis/consol_act/l43/l43.html?stem=&synonyms=&query=minimum%20wage#disp2)

<sup>7</sup> [http://www.pacii.org/cgi-bin/sinodisp/fm/legis/consol\\_act/pe185/pe185.html?stem=&synonyms=&query=health%20and%20safety](http://www.pacii.org/cgi-bin/sinodisp/fm/legis/consol_act/pe185/pe185.html?stem=&synonyms=&query=health%20and%20safety)

**Digital FSM Environmental and Social Management Plan**

258. **Engagement and Management of Contractors/Subcontractors.** The Department of Finance and Administration (DoFA) has a Central Implementation Unit (CIU) and are responsible for contractor engagement and compliance with contract conditions (payment of invoices). The CIU will address all LMP aspects as part of procurement for works. The responsible implementing agency for contractor management will be FSMTCC (OAE), who will be responsible for overseeing all aspects of implementation of the project, including compliance and contractor induction.
259. The contractor is subsequently responsible for management in accordance with contract specific Labor Management Plans (LMP). Implementation of which will be supervised by FSMTCC (OAE) as defined by specific Plans. The detailed approach is described in the following sections.
260. **Occupational Health and Safety.** Contractors must designate a minimum of one safety representative to ensure day-to-day compliance with specified safety measures and records of any incidents. Minor incidents and near misses are reported to FSMTCC (OAE) on a monthly basis, serious incidents are reported immediately. Minor incidents are reflected in the quarterly reports to the World Bank, major issues are flagged to the World Bank immediately.
261. **Labor and Working Conditions.** Contractors will keep records in accordance with specifications set out in this LMP. FSMTCC (OAE) may at any time require records to ensure that labor conditions are met. FSMTCC (OAE) will review records against actuals at a minimum on a monthly basis and can require immediate remedial actions if warranted. A summary of issues and remedial actions will be included in quarterly reports to the World Bank.
262. **Training of Workers.** Contractors are required to, at all times, have a qualified safety officer on board. If training is required, this will be the contractor’s responsibility. The safety officer will provide instructions to contractor staff. CIU will procure for training to address risks associated with labor influx and will provide a schedule for trainings required. The contractor will be obligated to make staff available for this training, as well as any additional mandatory trainings required by CIU, as specified by the contract.
263. **Addressing Worker Grievances.** The Contractors will be required to implement a Grievance Mechanism (GM) for Project staff. Contractors will be required to present a worker Grievance Mechanism which responds to the minimum requirements in this LMP. The DoFA CIU’s Safeguard Team will review records on a monthly basis. FSMTCC (OAE) will keep abreast of GM complaints, resolutions and reflect in quarterly reports to the World Bank.

Responsibility	Organization	Function	Individual
Engagement of project workers.	DoFA CIU	Project Manager	Beulah Daunakamakama
Management of project workers.	FSMTCC (OAE)	CEO / Project Manager	Pieter Bakker / To Be Determined (TBD)
Occupational Health and Safety.	Contractor(s)	Designated Safety Representative(s)	TBD
Training of Workers.	Contractor(s)	Designated Safety Representative(s)	TBD
Addressing Worker Grievances.	Contractor(s)	Management	TBD
	FSMTCC (OAE)	CEO	Pieter Bakker / TBD
	DoTCI	Secretary	TBD

**8.4.1. Occupational, Health and Safety**

264. The project implementing agencies will:
- a. Comply with FSM National and State legislation and other applicable requirements which relate to OHS hazards;
  - b. Enable active participation in OHS risks elimination through promotion of appropriate skills, knowledge and attitudes towards hazards;
  - c. Continually improving the OHS management system and performance;
  - d. Communicate this policy statement to all persons working on the project with emphasis on individual OHS responsibilities; and
  - e. Make this policy statement available to all interested parties.

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265. Contractors will be required to have at least one designated Safety Officer on each site. The Safety Officer will be responsible for:
- Identification of potential hazards to project workers, particularly those that may be life threatening;
  - Provision of preventative and protective measures, including modification, substitution, or elimination of hazardous conditions or substances;
  - Training of project workers and maintenance of training records;
  - Documentation and reporting of incidents;
  - Emergency prevention and preparedness and response arrangements to emergency situations; and
  - Remedies for adverse impacts such as occupational injuries, deaths, disability and disease.
266. The contractor(s) will be required to:
- Develop and implement procedures to establish and maintain a safe working environment, including that workplaces, machinery, equipment and processes under their control are safe and without risk to health;
  - Actively collaborate and consult with project workers in promoting understanding and methods for implementation of OHS requirements;
  - Provide OHS training to all employees involved in works or site supervision;
  - Provide laminated signs of relevant safe working procedures in a visible area on work sites, in English and local language as required;
  - Provide PPE as suitable to the task and hazards of each worker, without cost to the worker;
  - Put in place processes for project workers to report work situations that they believe are not safe or healthy and to remove themselves from situations they have reasonable justification to believe are unsafe;
  - Confirm appropriate measures are in place for working in communities with known risk of conflict / violence;
  - Ensure availability of first aid boxes in all work locations;
  - Provide employees with access to toilets and potable drinking water; and
  - Properly dispose of solid waste at designated permitted disposal/landfill sites.
267. Further to enforcing the compliance of environmental management, contractors are responsible and liable for the safety of site equipment, labors and daily workers attending to the construction site and safety of citizens for each subproject site, as mandatory measures.

### 8.4.2. Foreign Labor and Gender Based Violence

268. The labor force will likely be quite small (approximately 10 foreign and 10 local workers at a time). As such, there will be no major issues associated with accommodating the workforce or resulting from the volume of workers. The main impact will be that the workers will be in isolated locations with communities, including individual houses and remote atolls. As such, the focus will be on risks associated with worker behaviour and preventing gender-based violence.
269. Contractors will be required to comply with the Codes of Conduct (Appendix ten) to outline labor relations with local communities. The Code of Conduct will commit all workers, sub-consultants and suppliers to acceptable standards of behavior. The Code of Conduct includes sanctions for non-compliance, including non-compliance with specific policies related to gender-based violence, sexual exploitation and sexual harassment (e.g. termination). The Code of Conduct will be required to be signed by each worker to indicate that they have:
- Received a copy of the Code of Conduct as part of their contract;
  - Had the Code of Conduct explained to them as part of induction process;
  - Acknowledged that adherence to this Code of Conduct is a mandatory condition of employment; and
  - Understood that violations of the Code of Conduct can result in serious consequences, up to and including dismissal, or referral to legal authorities.
270. Information on the Code of Conduct shall be outlined as part of the community consultation process, including in local languages where needed.

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271. Contractors must address the risk of gender-based violence through:
- Mandatory training and awareness raising for the workforce about refraining from unacceptable conduct toward local community members, specifically women. Training may be repeated as required;
  - Informing workers about national laws that make sexual harassment and gender-based violence a punishable offence which is prosecuted; and
  - Adopting a policy to cooperate with law enforcement agencies in investigating complaints about gender-based violence or criminal activity.
272. Developing a system to capture Gender Based Violence (GBV), sexual exploitation and workplace sexual harassment related complaints/issues. This process will be under the portfolio of the CIU Safeguards Advisors and/or National Gender Specialist (or equivalent) who shall identify and engage the relevant stakeholders on GBV and HIV/Aids issues.

### 8.5. POLICIES AND PROCEDURES

273. Most environmental and social impacts of the project resulting from activities directly under the control of contractors will be mitigated directly by the same contractors. As such, the approach is to ensure that contractors effectively mitigate project related impacts. CIU will incorporate standardized environmental and social clauses in the tender documentation and contract documents in order for potential bidders to be aware of environmental and social performance requirements that shall be expected from them, are able to reflect that in their bids, and required to implement the clauses for the duration of the contract. CIU will enforce compliance by contractors with these clauses.
274. As a core contractual requirement, the contractor is required to ensure all documentation related to environmental and social management, including the LMP, is available for inspection at any time by the FSMTCC (OAE) or CIU. The contractual arrangements with each project worker must be clearly defined. All environmental and social requirements will be included in the bidding documents and contracts.
275. Under no circumstances will contractors, suppliers or sub-contractors engage forced labor.

### 8.6. AGE OF EMPLOYMENT

276. FSM does not have a legal minimum working age. For the Digital FSM Project, the minimum age will be 18 years.
277. The workforce involved in this project will be relatively small. There is an expectation that international workers will be selected based on technical skill and the Labor Code requires foreign workers to have a minimum of two (2) years professional experience in order to work in FSM. As such, the minimum age for foreign workers shall be 18 years.
278. For local workers, the minimum age will also be 18 years of age.
279. Workers will be required to provide proof of their identity and age before commencing any works on site.
280. If any contractor employs a person under the minimum age, that contractor be required to undertake relevant management measures to ensure the safety of the worker and implement immediate measures no repeat action is taken.

### 8.7. TERMS AND CONDITIONS AND EQUAL OPPORTUNITIES

281. All terms and conditions as outlined in the World Bank Environmental and Social Framework (ESF) ESS2, paragraphs 10 to 15 apply to contracted workers.
282. In line with national law, the maximum working hours per week will be 40 hours (8 hours per day, 5 days per week).
283. Employment opportunities will be available to all.

### 8.8. GRIEVANCE MECHANISM

284. A formal Grievance Mechanism (GM) will for project workers is as per the process outlined below. This takes into account culturally appropriate ways of handling the concerns of direct and contracted workers. Processes for documenting complaints and concerns have been specified, including time commitments to resolve issues.
285. In addition, the Digital FSM Project GM has been and will continue to be communicated to all stakeholder groups during each planned engagement activity. Special communications will be held with the vulnerable groups identified at each location.



### 8.8.1. Communications

All project workers will be informed of the Grievance Mechanism process as part of their contract and induction package.

### 8.8.2. Process

286. The process for the Worker GRM is as follows:

- a. The Aggrieved Person/Party may report their grievance in person, by phone, text message, mail or email (including anonymously if required) to the Contractor in the first instance, as the initial focal point for information and raising grievances;
- b. For complaints that were satisfactorily resolved by the Aggrieved Person/Party or Contractor, the incident and resultant resolution will be logged and reported to the Digital FSM Project Manager.
- c. Where the Aggrieved Person/Party is not satisfied, the Contractor will refer the aggrieved party to the Digital FSM Project Manager. Grievances may also be referred or reported to the DoTCI or FSMTCC (OAE) if deemed suitable.
- d. The Digital FSM Project Manager endeavors to address and resolve the complaint and inform the Aggrieved Person/Party. For complaints that were satisfactorily resolved by the Digital FSM Project Manager, the incident and resultant resolution will be logged by the Digital FSM Project Manager. Where the complaint has not been resolved, the Digital FSM Project Manager will refer to the FSMTCC (OAE) General Manager and Secretary of DoTCI for further action or resolution;
- e. If the matter remains unresolved, or the Aggrieved Person/Party is not satisfied with the outcome, the Secretary of DoTCI refers the matter to the Project Steering Committee for a resolution. The Digital FSM Project Manager will log details of issue and resultant resolution status;
- f. If it remains unresolved or the complainant is dissatisfied with the outcome proposed by the Project Steering Committee, the Aggrieved Person may refer the matter to the appropriate legal or judicial authority. A decision of the Court will be final; and
- g. Feedback must be provided to the lodger of each step no less than weekly, or more often if suitable.

287. Steps a through e should be undertaken immediately. Where the matter is referred to the Digital FSM Project Manager, a resolution should be sought within two weeks. If unsuccessful and the matter is referred to the Project Steering Committee, this should occur within a month

288. Each record is allocated a unique number reflecting year and sequence of received complaint (for example 2019-01, 2019-02 etc.). Complaint records (letter, email, record of conversation) should be stored together, electronically or in hard copy. The Digital FSM Project Manager will be responsible for undertaking a regular (at least monthly) review of all grievances to analyze and respond to any common issues arising. The Digital FSM Project Manager is also responsible for oversight of the GRM.

289. These steps should be undertaken immediately. Where the matter is referred to the Digital FSM Project Manager, a resolution should be sought within two weeks. If unsuccessful and the matter is referred to the Project Steering Committee, this should occur within a month

290. Each record is allocated a unique number reflecting year and sequence of received complaint (for example 2019-01, 2019-02 etc.). Complaint records (letter, email, record of conversation) should be stored together, electronically or in hard copy.

291. Any grievance related to corruption or any unethical practice should be referred immediately to the Ombudsman of the FSM Supreme Court.

## 8.9. CONTRACTOR MANAGEMENT

292. The tendering process for contractors will require that contractors can demonstrate their labor management and OHS standards, which will be a factor in the assessment processes.

293. Contractual provisions will require that contractors:

- a. Monitor, keep records and report on terms and conditions related to labor management;
- b. Provide workers with evidence of all payments made, including benefits and any valid deductions;
- c. Keep records regarding labor conditions and workers engaged under the Project, including contracts, registry of induction of workers including Code of Conduct, hours worked, remuneration and deductions (including overtime);

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- d. Record safety incidents and corresponding Root Cause Analysis (lost time incidents, medical treatment cases), first aid cases, high potential near misses, and remedial and preventive activities required (for example, revised job safety analysis, new or different equipment, skills training, etc.);
  - e. Report on number of workers, indication of origin (international or local), gender, age - with evidence that no child labor is involved, and skill level (unskilled, skilled, supervisory, professional, management);
  - f. Training/induction dates, number of trainees, and topics; and
  - g. Details of any worker grievances including occurrence date, grievance, and date submitted; actions taken and dates; resolution (if any) and date; and follow-up yet to be taken. Grievances listed should include those received since the preceding report and those that were unresolved at the time of that report.
294. Monitoring and performance management of contractors will be the responsibility of FSMTCC (OAE). FSMTCC (OAE) will be responsible for oversight of labor management provisions as well as contract supervision.

### 8.10. LOCAL WORKERS

295. Local workers will be engaged where possible on the project, particularly for labor and construction work.
296. Local workers can also access the worker GRM.

### 8.11. PRIMARY SUPPLY WORKERS

297. No significant risk of child or forced labor or serious safety issues in relation to primary suppliers has been identified for this project at this stage. This section will be updated as more information on primary suppliers becomes available, including once technical design options are confirmed and resulting needed supplies are clearer.

## 9 LAND ACCESS AND USE

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### 9.1. GENERAL

299. The Project will be demand driven where communities elect to benefit from project outcomes and will be delivered in partnership with communities.
300. The assessment of the requirements of ESS5 (section **Error! Reference source not found.** below) has identified that a Resettlement Policy Framework (RPF) is not relevant. However, to address any land acquisition or land use restrictions, the Land Access Process (LAP) will be used to meet all requirements of ESS5. The Land Access Process (LAP) will be based on meaningful engagement with the communities who have been identified as landowners or land users of sites that may be suitable for project related infrastructure.
301. All land access will be voluntary, however ESS5 will need to be applied in the event of sites being identified with potential land acquisition or land use restrictions.
302. The Project will use existing government-leased land or public easements wherever feasible. Potential sites where land may be needed for placement of towers or associated infrastructure have not yet been identified (with some exception where government-leased land is available).

### 9.2. INVOLUNTARY RESETTLEMENT OR LAND ACQUISITION

303. There is no resettlement (voluntary or involuntary) as part of the Project. The project works will be primarily be undertaken on existing roads and public easements, or on sites that are part of existing government-leased land.
304. While the FSM Government has the legal ability to exercise eminent domain to take land for public purposes, in practice this is never implemented. As such, involuntary land acquisition or access is prohibited from Project activities.
305. The project's land access needs are flexible and can fully accommodate a range of locations to avoid involuntary land access.

### 9.3. PROJECT DESIGN AND MITIGATION HIERARCHY

306. There is flexibility in the project design, including options of overhead or underground cables or wireless connection from the node. Where specific impacts are identified, these options to avoid the impact should be considered in the first instance.
307. Where the project design has proposed installation of fiber optic cables in locations without existing roads or easements (notably in Chuuk lagoon islands), the design will be reconsidered to determine alternative solutions given the significant process involved in negotiating land permissions in this context. If land negotiations are possible, they will be conducted in line with the LAP.
308. For the Walung community in Kosrae, the process of negotiating easements with traditional landowners is currently underway by the State and Municipal Government for an ADB funded for an electricity project, which would be on the same alignment as proposed fiber under Digital FSM. Collaborating with this project early to include other service types could be beneficial to reduce the complexity of seeking approvals for Digital FSM infrastructure.
309. For communities and villages where houses are built behind other houses and works such as cable stringing may need to go through land held by others in order to provide service connection, voluntary agreement would be required from the affected households. In the unlikely case where agreement cannot be reached, alternative solutions such as wireless (e.g. 5G or similar) will be considered as an alternative mechanism to provide internet services to all households.

### 9.4. LAND RELATED IMPACTS

310. No impacts to livelihood are anticipated. While there may be some need to trim trees or other vegetation to accommodate stringing of cables or install underground cable in a micro-trench, impacts to crops will be avoided where possible. The livelihood or subsistence impacts will therefore be minimal and will be addressed via the land access process as necessary.
311. Agreements will be freely negotiated with landowners, which could be individuals or multiple owners. Impacts and restriction will be fully explained, and landowners will be made aware of how impacts will be assessed, avoided and mitigated. In the case of multiple land ownership, all landowners will need to agree that land can be accessed.

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312. An assessment of the land related impacts associated with the Project has been undertaken to determine likely impacts associated with the various project activities. Impacts to land are anticipated to be able to be avoided in most instances. Components 2, 3 and 4 of the Project have no implications for land.

313. The anticipated impacts to land are described in Table 14.

Activity	Land Related Impacts		
Component 1: National Digital Connectivity Infrastructure	Pre-construction/planning activities	Construction impacts	Operational impacts
<b>Sub-Component 1.1</b>			
1. Utilize existing infrastructure (power poles) to install above ground fiber across the main islands, following existing power lines. No additional land access required.	None – existing easements in place	Minor. Temporary access restriction during construction works. Potential for impacts to vegetation such as tree trimming but will be avoided where possible.	No additional impacts; restriction already in place.
2. Some additional poles may be necessary for above ground fiber. Government land will be prioritized; if not available, access to private land will be negotiated.	Government land: None – existing easements in place. Private land: commence land access negotiation; identify any site-specific impacts.	Minor. Temporary access restriction during installation of poles. Voluntary land access process to be implemented for private land	Minor impacts due to small land take and potential restriction on land;
3. Where not possible to use poles, the project will install fiber underground through the use of micro-trenching, normally on the side of the road within existing road easements. Government land will be prioritized; if not available, access to private land will be negotiated.	Existing road easements in place on Government land Private land: commence land access negotiation; identify any site-specific impacts.	Minor. Temporary access restriction during construction works. May be some minor impacts to vegetation informally growing on easements. Impacts to private land to be specified in land access agreement.	Minor impacts due to small land take and potential restriction on land; Landowners would have some restrictions on land use – such as growing trees – in proximity to the fiber.  Maintenance access required, will be included in Land Access process.
4. Above ground fiber will be used for Fiber To The Home (FTTH) as requested – following existing power lines.	Requests from each household would be required. FTTH would only be installed by written request.	No land impacts but potential impacts due to stringing new cable (similar to existing electricity connection).	Maintenance access required, will be included in FTTH request.
5. Installation of microwave towers. Government land will be prioritized; if not available, access to private land will be negotiated.	Existing government-leased land (e.g. schools) to be used wherever feasible.	Towers on Government land: Minor impacts. Temporary access restriction during construction works  Towers on private land: site specific impacts to be identified and any required mitigation to be described in the Land access process. All mitigation to be provided by the Project. In rare cases, this	Access to the sites would be required for maintenance.  Landowners would have some restrictions on land use – such as growing trees – in proximity to the tower locations.

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Activity	Land Related Impacts		
Component 1: National Digital Connectivity Infrastructure	Pre-construction/planning activities	Construction impacts	Operational impacts
		can include compensation, but preference will be for the Project to make good any necessary impacts.	
6. Installation of fiber along footpaths (community walking tracks) with no existing easement.	Land access process implemented. Community agreement from all landowners would need to be negotiated voluntarily for the project to proceed in these locations.  Where permission is not granted, wireless (5G or wide area Wi-Fi) could be considered as an alternative.	Minor. Temporary access restriction during construction works.	Landowners would have some restrictions on land use – such as growing trees – in proximity to the fiber.
<b>Sub-Component 1.2</b>			
7. Installation of satellite dishes to the sides of existing public buildings (e.g. schools, dispensaries)	None - existing easements in place	Minor. Temporary access restriction during construction works.	None
8. In some locations, towers will be built with a small footprint, on existing government-leased land and requiring power source	None - existing easements in place	Minor. Temporary access restriction during construction works.	None.

Table 14 Land Impacts Associated with Component 1 Activities

314. Based on these activities outlined in **Error! Reference source not found.**, those that some access to private land would require the Land Access Process (LAP) to apply. The different categories that are outlined in the LAP are:
- a. **Category 1** – Infrastructure with minor land take (e.g. additional poles)
  - b. **Category 2** – Infrastructure with larger land take (e.g. sites for tower locations);
  - c. **Category 3** – Land requiring new easements; and
  - d. **Category 4** – Requests for FTTH connections to each premises.
315. Minor access restrictions and impacts to vegetation are anticipated during construction period (up to one month in any one location). This includes access to land where existing electricity poles are located and access to land for the erection of new poles or towers where required. Fiber to the Home (FTTH) by written request from the landowner, with a process in place for landowners to identify any assets to be protected and contractors also required to undertake a site inspection for any impacts prior to works. Landowners may need to keep trees trimmed from the cables, however largely requirements are already in place due to existing power connections;
316. Microwave towers to be built in some locations, with a small footprint (approx.10x15m, including power supply such as solar) and line of sight constraints. In some cases where suitable government-leased land is not available, land will need to be voluntarily accessed for these sites in line with the Land Access process. Agreements will also address issues such as restrictions on trees growing in front of the towers (which require line of sight), as well as access for maintenance. Landowners will be fully informed of any impacts or future restrictions;
317. Towers may also be required on outer atolls, where a satellite dish attached to the side of an existing building is not adequate to provide coverage to all areas (e.g. access to other islands within the atoll structure). In this case, existing government-leased land would also be prioritized, and as a last option, voluntary land acquisition procedures would be followed; and

318. Fiber may be laid along some roads or footpaths (community walking tracks) without existing easements. This is most likely in smaller islands with more limited infrastructure than the main island of each state. In these cases, the Land Access process will be agreed with the community. Alternative technology such as 4G or community Wi-Fi will be available if access to land is not approved by the owner/s.

### 9.5. APPLICABILITY OF ESS5

319. Table 15 assessed the scope of ESS5 Project against Project activities.

ESS5 Applicability Criteria	Assessment of Relevance to Project
Land rights or land use rights acquired or restricted through expropriation or other compulsory procedures in accordance with national law.	None –there will be no compulsory land acquisition.
Land rights or land use rights acquired or restricted through negotiated settlements with property owners or those with legal rights to own the land, if failure to reach settlement would have resulted in expropriation or other compulsory measures.	None – there will be no compulsory land acquisition. Eminent domain will not be exercised.
Restrictions on land use and access to natural resources that cause a community or groups within a community to lose access to resource usage where they have traditional or customary tenure, or recognizable usage rights. This may include situations where legally designated protected areas, forests, biodiversity areas or buffer zones are established in connection with the project.	None – there will be no restriction on land use or access to natural resources, aside from temporary and minor access changes to be managed and notified during the construction period.
Relocation of people without formal, traditional, or recognizable usage rights, who are occupying or utilizing land prior to a project-specific cut-off date.	None – no people or structures will be relocated.
Displacement of people as a result of project impacts that render their land unusable or inaccessible.	None – there will be no displacement of people.
Restriction on access to land or use of other resources including communal property and natural resources such as marine and aquatic resources, timber and non-timber forest products, fresh water, medicinal plants, hunting and gathering grounds and grazing and cropping areas.	None – there will be no restriction of access to land or other resources, aside from temporary access changes to be managed and notified during the construction period.
Land rights or claims to land or resources relinquished by individuals or communities without full payment of compensation.	Relevant. Land can be donated voluntarily in accordance with ESS5 4(g) footnote 10. Compensation may be paid for assets where appropriate, but preference will be for avoid impacts or implementation of other mitigation measures.
Land acquisition or land use restrictions occurring prior to the project, but which were undertaken or initiated in anticipation of, or in preparation for, the project.	None - no restrictions implemented in preparation of Project activities.

Table 15 Project Activities and applicability of ESS5

320. A Resettlement Policy Framework (RPF) is not relevant given the limited applicability of the requirements of ESS5. However, to address any land acquisition or land use restrictions, the Land Access Process (LAP) will be applied.

321. The below sections outline any potential considerations relating to land as part of the project, and procedures to manage those in accordance with the principles of ESS5 and national legislation.

### 9.6. GAP ANALYSIS OF FSM LEGISLATION AND ESF

322. The legislation relating to land is outlined in Section Five of the ESMP. The gaps in legislation as compared to the requirements under ESS5 are as outlined in **Error! Reference source not found.**

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Bank ESS Requirement	FSM Equivalent	Equivalence
<b>ESS5 – Land Acquisition, Restrictions on Land Use and Involuntary Resettlement</b>		
<p><b>1. Alternatives to reduce impacts.</b> Limit land acquisition to specified project purposes and time. Consider alternative designs to avoid or minimize land acquisition, paying attention to displacement, gender impacts and impacts on vulnerable people.</p>	<p>FSM's EIA encourages the avoidance of adverse environmental and social impacts and their effective mitigation where avoidance is not possible.</p>	<p>Equivalent.</p>
<p><b>2 Compensation at replacement cost.</b> Offer affected people compensation at replacement cost (market price and transaction costs).</p>	<p>A limit is imposed on how much compensation is paid for lost income from business or farm operation. Compensation is not at full replacement cost using current market values.</p>	<p>Partially equivalent. ESS5 requirements would be followed.</p>
<p><b>3. Informal occupiers.</b> Include rights and claims of customary and informal users, and informal economic activities. Provide arrangements for adequate housing with security of tenure.</p>	<p>Avoiding hardship on displaced landowners is explicitly provided for legal landowners and occupiers, not for illegal occupiers and their assets / livelihoods.</p>	<p>Not equivalent. ESS5 requirements would be followed.</p>
<p><b>4. Alternatives to cash compensation.</b> Where livelihoods are land-based, offer an option for replacement land. If not, offer alternative income earning opportunities.</p>	<p>No relevant legislation</p>	<p>Not equivalent. ESS5 requirements would be followed.</p>
<p><b>5 Land donation.</b> Voluntary land donations may be acceptable if choices including refusal; if donation does not affect livelihoods; if no relocation is involved; if direct benefits from the project; and if records are kept.</p>	<p>Land donations are allowed for in legislation.</p>	<p>Equivalent.</p>
<p><b>6. Forced eviction.</b> Compulsory acquisition requires advance notice, meaningful opportunities to lodge appeals, and avoidance of disproportionate or excessive force.</p>	<p>No specific requirement.</p>	<p>Not equivalent. Not relevant for this project.</p>
<p><b>7. Transition Support. Provide support</b> as necessary based on estimate of time required to restore income-earning capacity.</p>	<p>Notice is required for people required to relocate (90 days).</p>	<p>Not equivalent, no relocation will take place</p>
<p><b>8. Livelihoods.</b> Include provision of timely assistance to restore livelihoods, particularly for vulnerable groups. Provide assistance in lieu of land compensation sufficient to re-establish livelihoods elsewhere.</p>	<p>Avoiding hardship on displaced landowners is explicitly provided for, but more for legal landowners, and legal occupiers, not for illegal occupiers and their assets / livelihoods.</p>	<p>Partial equivalence. No livelihood impacts are predicted. Not relevant for this project.</p>
<p><b>9. Gender.</b> Include provisions to protect and support women, including documentation, training, access to credit and jobs.</p>	<p>No relevant legislation related to gender and land.</p>	<p>Not equivalent. If any relevance, ESS5 would apply.</p>
<p><b>10. Community engagement and grievance redress.</b> Engage with affected communities, including host communities. Provide options from which affected persons may choose, and throughout the whole process from to relocation and livelihood restoration. Ensure that a project grievance mechanism is in place.</p>	<p>FSM legislation requires negotiations with affected land owners, on values of land, and resettlement assistance.</p>	<p>Partial equivalence. Consultations as per approved SEP will be implemented.</p>

<p><b>11. Restrictions of access to natural resources.</b> When livelihoods are natural resource-based, allow continued access to affected resources or provide compensation or access to equivalent alternative resources. Common property compensation may be collective in nature.</p>	<p>The same principle is implied in the FSM EPA and EIA Regulation 1994.</p>	<p>Equivalent.</p>
<p><b>12. Negotiated settlements.</b> These requirements apply to rights acquired or restricted through negotiated settlements, if failure to reach settlement would have resulted in compulsory procedures</p>	<p>Real property needs to be appraised by government prior to any negotiations commencing, and under no circumstances is the amount payable to be less than the appraised value.</p>	<p>Partial equivalence.  Not relevant for this project as there will be no compulsory land access. Where negotiated lease arrangements are necessary they will be undertake in accordance with ESS5</p>

Table 16 Comparison of FSM Legislation and ESS5 Requirements

## 9.7. LAND ACCESS PROCESS

323. This Land Access Process (LAP) has been prepared in accordance with the objectives and principles of ESS5. Land used for this project will be prioritized as follows:
- a. The Project will use existing government-leased land or easements wherever feasible.
  - b. Where this is not possible, any access or use arrangements for private land will be voluntarily negotiated with landowners. This could involve a Land Use Agreement (LUA) to be signed with all landowners of each site for a lease, voluntary land donation or fully compensated land acquisition.
324. Where landowners are not interested in pursuing a voluntary agreement, then alternative technical solutions would be considered where relevant or the project would not proceed in that area.

### 9.7.1. Site Criteria

325. Any private land considered for voluntary land access or use arrangements must meet the following criteria:
- a. The site must be technically feasible for the project purposes (e.g. geographical location, size of land);
  - b. The site must be screened for potential environmental and social impacts, including cultural heritage (tangible or intangible) significance, verified by the Division of Historic Preservation (as per template in Annexure Eleven);
  - c. Use of the site for the project must not require the relocation of housing or impacts to livelihood;
  - d. Landowners and land users are able to be identified, contacted and are capable of entering into a voluntary agreement (including formal or informal landowners); and
  - e. Where multiple contiguous LUAs are required, all the landowners and proposed sites must meet the above criteria.
326. Where any of the above criteria are not met, alternative sites or technical solutions (e.g. wireless instead of fiber) must be considered.

### 9.7.2. Types of Land Access Arrangements

#### 9.7.2.1. Changes to Land Use or Ownership

327. The main land transaction types involving changes to land use or ownership are:
- h. **Land leasing.** Voluntary land taking by a lease arrangement is a business agreement between two parties formalized in a signed legally binding lease agreement with terms and conditions mutually agreed on. In negotiations, all losses accrued to legal occupiers (tenants) who will be relocated are the responsibility of the landowner. Illegal occupiers such as squatters whose livelihoods are adversely affected are entitled to resettlement assistance under ESS5.
  - i. **Permanent land acquisition with full compensation.** Fair compensation and valuation are required and mutually agreed to. Valuation should reflect existing market conditions and prices. Project-affected people are entitled to financial



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compensation and other resettlement assistance. Permanent land taking with full compensation can also be done involuntarily by the FSM Government, but that approach is not preferred.

- j. **Voluntary Land Donation.** Voluntary Land Donations (VLD) cede land to the Government at no cost, but ESS5 requires compensation for lost crops, other non-land assets and livelihood sources, and resettlement assistance to support affected persons. Landowners would be required to be fully informed of the option of financial compensation available to them and that land donation is given willingly and without coercion.

328. Given the scarcity of land, the generally preferred practice in FSM is to sell land at a negotiated price or enter a lease agreement, however lease agreements can be quite complicated. These options may be required for new tower locations that are not on existing government-leased land. VLD is expected to be relevant for sites requiring additional poles for overhead cables or other sites with minor footprints or restrictions.

*9.7.2.2. Establishment of Easements*

- 329. Easements involve the FSM Government securing the right to use the land under agreed conditions for the placement of utilities such as underground or above ground cables. They do not involve change of land ownership.
- 330. It is expected that easements are in place for most of the planned routes for fiber cables to be installed. However, in some locations, easements do not exist (such as footpaths, community walking tracks and roads on some of the Lagoonal Islands in Chuuk).
- 331. The FSM TCC (OAE) is understood to meet the criteria to be considered a utility, however a formal process of being recognized as such in each state may be required to ensure that the legislation applicable to utilities is able to be applied.

*9.7.2.3. Requested Connections for Fiber to the Home (FTTH)*

332. In locations where FTTH is anticipated, landowners or land users will need to engage in a process to formally request connection to their premises from the project. The format of these requests will differ in each state, in accordance with state legislation, and is envisaged to be facilitated by each state’s Department of Land. In some states, such as Kosrae, state legislation allows for group requests to be made for utility connections.

**9.7.3. Applicable Land Access Arrangements**

333. Land access is required to install Project infrastructure. Based on an assessment of project activities and potential impacts, land access arrangements have been identified for each of the following categories:

Category	Description	Land Access Arrangement	Agreement Type
1	Infrastructure with minor land take (e.g. additional poles)	Voluntary Land Donation (VLD)	Land Use Agreement
2	Infrastructure with larger land take (e.g. sites for tower locations)	VLD, Permanent Land Acquisition, or Lease	Land Use Agreement / Lease Agreement
3	Land requiring new easements (roads, community walking tracks, footpaths)	Establishment of Easement	Public Easement Agreement
4	Requests for FTTH connections to each premises	Formal Request	Request for FTTH

334. Each of these land access arrangements are outlined in the following sections.

**9.7.4. Principles of Land Acquisition and Long-Term Leases**

- a. The World Bank’s Voluntary Land Donation protocol is to be applied in full where land donation is anticipated to allow project delivery;
- b. Consider alternatives to land acquisition, especially where replacement land is scarce or non-existent;
- c. Collective compensation may be appropriate for communal land, and must be distributed equitably among community members;
- d. Informed Consent must be established; and

- e. Land access processes, including signing of LUA, leases, easements or requests for FTTH will be fully implemented by the Project prior to commencement of works.

#### 9.7.5. Establishing Informed Consent / Stakeholder Consultation

335. For Voluntary Land Donations, Permanent Land Acquisition, Leases or Establishment of Easements (Categories 1, 2 or 3), informed consent must be established through the following stakeholder consultation process:
- a. Undertake community consultation, including with traditional leaders, women and the broader community to determine if there is community support for the project and proposed land use for towers, easements or related infrastructure;
  - b. Consult the community on their preferences for site selection and identify any cultural heritage significance, including consulting with the Division of Historic Preservation;
  - c. Confirm that proposed sites don't have fixed physical assets (which may belong to a party other than the landowner);
  - d. Consider alternative sites and ensure that any potential impacts are avoided or minimized;
  - e. Establishing who the legal landowners are (formal or informally titled, clan, family or private ownership, including absentee community members if relevant);
  - f. Undertake due diligence on owners and users of land to ensure correct parties are a part of the negotiated agreement;
  - g. Identify if there are any land users who would be affected, in addition to landowners; and
  - h. Clearly inform the landowners that the agreement to allow land access is completely voluntary and that they are able to refuse use of the property.
336. All community consultations are to be recorded and outcomes of the consultations are to determine technology type and locations.

#### 9.7.6. Process for Voluntary Land Donation, Land Acquisition and Long-Term Leases

337. The Governments of each State in FSM have a process for voluntary land acquisition of private land that would be followed along with compliance with ESS5. Land Use Agreements (LUAs) are relevant for Voluntary Land Donation or Land Acquisition, and Lease Agreements would be used to establish Long-Term Leases.
338. The following process needs to be followed to enter into a LUA or Lease Agreement:
- a. Establish informed consent of the landowners;
  - b. May be accompanied by one-off or ongoing payment or other compensation, including community compensation;
  - c. Requirements for ongoing access (such as for maintenance) or site clearance to enable access agreed in writing (if applicable);
  - d. Negotiation regarding impacts with landowners which could include up front works, or payment of compensation for any impacts to assets on the land in accordance with ESS5 and the applicable state and national legislation;
  - e. If agreement is reached, the Lease Agreement or Land Use Agreement (LUA) is entered into by the landowners and the community leaders.
339. It is important that absentee landowners are engaged, and that a suitable witness (non-clan member) signs the agreement. If the landowner parties are in disagreement about the land or conditions of the LUA, or if landowners are excluded from discussions, then the subproject will not proceed, and the grievance process must be followed where relevant.
340. Land Use Agreement (LUA) will be prepared for every landowner of each site. The LUAs or Lease Agreements will be between the borrower and landowners and will describe and address any minor impacts associated with use of the site, including clearance of vegetation or ongoing restrictions (e.g. not planting trees within a certain area) or maintenance access requirements. The Agreements will also document that the transfer was freely made, and was not subject to coercion, manipulation or any form of pressure.
341. Lease agreements will document details of location and expected timing of construction works, duration of lease, intended use of the site under the lease arrangement for the Project and any restrictions to use of the land around the lease area.

#### 9.7.7. Requests for FTTH

342. Any works that would be conducted to the household or business premises level would be undertaken strictly with requested permission or explicit request from the landowners. Landowners who do not want to have their property connected will not be included in the project implementation.
343. Given that FTTH will be installed above ground and along the lines of existing power cables, impacts to assets are expected to be avoidable and minimal. However, in instances where there are impacts, contractors will be required to undertake a site assessment to identify any potential impacts at the household or business level, including identification of any potential impacts trees/crops, gardens, fixed assets etc.
344. In addition, contractors would also need to identify any impacts relating to any land users (who may differ from the landowners).
345. If there are impacts that cannot be avoided, the Contractor would need written permission from the landowner to proceed with the installation, acknowledging the impacts that cannot be avoided. Compensation for assets is not anticipated given the option for households to opt in or out of service provision, and the potential for alternatives (such as wireless) to be considered.

#### 9.7.8. Screening Process

346. Screening of proposed sites will be undertaken in accordance with Annexure Eleven.

#### 9.7.9. Roles and Responsibilities

347. Stakeholder Engagement will be the responsibility of the CIU's Safeguards Specialists during the project design phase.
348. During construction works, any land related issues raised by community members or landowners with the on-site construction workers must be raised as per the established Grievance Mechanism.

### 9.8. TEMPORARY ACCESS RESTRICTIONS

349. During the construction period, there may be some temporary access restrictions and traffic management required to ensure public and worker safety.
350. All access restrictions will be notified in advance, including through the provision of verbal face to face meetings, electronic, radio, TV and print notices to nearby businesses, residences or facilities to notify of construction schedule and contact person in case of inquiries. Communities will also be informed of approximate dates and locations of expected works as part of the consultation process.
351. The impact of temporary access restrictions is considered minor and manageable.

#### 9.8.1. Temporary Storage Sites during Construction

352. Contractors are responsible for negotiating temporary storage areas equipment directly with local landowners during the pre-construction phase. The ESMP outlines required conditions (LO1.6) for contractors to ensure land is fully restored before contractors leave and that contractors obtain signed consent of landowners before the commencement of civil works.

### 9.9. GRIEVANCE MECHANISM

353. A formal Grievance Mechanism (GM) has been developed for this project as a part of the ESMP. The GM takes into account culturally appropriate ways of handling the concerns of affected parties and describes the way that these community members will be made aware of this mechanism. Processes for documenting complaints and concerns have been specified, including time commitments to resolve issues.
354. The GM has been and will continue to be communicated to all stakeholder groups during each planned engagement activity. Special communications will be held with the vulnerable groups and traditional landowners identified at each location.

### 9.10. MONITORING ARRANGEMENTS

355. Monitoring includes review of any land acquisition, payment of compensation, and functioning of project grievance procedures every two months during the project preparation phase. Monitoring should be conducted by an individual, firm, or community

### **Digital FSM Environmental and Social Management Plan**

organization not directly affiliated with the IA. Any issues or problems associated with implementation that are observed in the monitoring process will be reported to the IA and the World Bank project team.

## 10 CONSULTATION

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### 10.1. STAKEHOLDER ENGAGEMENT DURING PROJECT PREPARATION

356. During Project preparation, discussions were held between the implementing agencies and various stakeholder FSM Government agencies, along with and the World Bank team. Refer Section 9.3.2.

### 10.2. STAKEHOLDER ENGAGEMENT PLAN

357. A Stakeholder Engagement Plan (SEP) has been prepared. The SEP will be implemented, updated and refined throughout the lifecycle of the Project.

358. Digital FSM was discussed with a wide range of stakeholders including relevant national and state government departments, industry groups, NGOs, and individual community members. Workshops in Pohnpei with state representatives were held during the design of the project, and ongoing consultation with stakeholders and any affected communities will continue throughout the Digital FSM following the Stakeholder Engagement Plan (SEP). Details of those consulted is included in the Stakeholder Engagement Plan.

### 10.3. KEY COMMENTS FROM CONSULTATION

359. From the consultations undertaken, the key issues are outlined below. For details, see consultation reports in the Stakeholder Engagement Plan (SEP) Annexes.

- a. **Land** – in all locations where there will be construction outside existing public land or easements for utilities, there will need to be extensive consultations and agreement with communities. This will be particularly important for Chuuk's lagoonal islands, Yap's Rumung Island, and the Walung community in Kosrae. Microwave towers require line of sight and has an infrastructure footprint on both sides. In all cases existing government-leased land will be prioritized, but in some locations, there may also be negotiations, Land Use Agreements, requests for services or permissions put in place.
- b. **Construction works** – communication regarding when, where and duration of construction works in each location will be important, including any temporary access restriction during works, as well as information on community awareness of issues and impacts of transient construction workers, particularly when working near private houses or remote or isolated communities. Community awareness raising on issues such as the recently changed age of consent (Chuuk state) would also be beneficial, and given the cultural and historical context, what is acceptable in terms of access of minors to workers would also be important to engage with stakeholders on to reduce the incidence of guardians who are selling minors for sex with workers.
- c. **Competition in the Telecommunications Sector** – across all four states of FSM during consultations, concern was raised with FSM Telecom's long-term involvement. There was a lot of interest in increased competition in the telecommunications retail sector, as well as the role of FSMTCC (OAE). People expressed concern with regards to the price and speed of phone and internet services, to businesses and individuals, and were also concerned about ongoing costs of maintenance being passed through to consumers. Further engagement is needed to understand the basis of the concerns, and to understand the role of the TRA and FSMTCC (OAE) in addressing any issues and communicating to communities and key stakeholders.
- d. **Internet use** – public awareness raising is key to ensure that citizens who may be exposed to the internet for the first time, or have much improved service, are aware of risks such as online scams, fraud, identity theft, viruses, hacking, spyware and malware and what they can do to identify potential risks and protect themselves. Programs targeting parents to understand risks to children, such as content that may be explicit or violent, as well as people who may target children for grooming or other risks, would be beneficial to be included under the program. Youth and cyber-bullying could also be targeted through campaigns under this program.
- e. **Legislation** – where there are changes to legislation under the program, such as introducing laws regarding posting content without consent (e.g. revenge pornography), it will be important that the legislation is socialized, and stakeholders are aware of the changes and implications of the law.

## 11 GRIEVANCE MECHANISM

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### 11.1. INTRODUCTION

360. During the planning, construction and implementation phases of the Digital FSM project, stakeholders may be adversely affected, directly or indirectly due to the Digital FSM activities. The grievances that may arise can be related to social issues such as eligibility criteria and entitlements, disruption of services, temporary or permanent loss of livelihoods and other social and cultural issues. Grievances may also be related to environmental issues such as excessive dust or noise generation, damages to infrastructure due to construction related vibrations or transportation of raw material, noise, traffic congestions, changes to access etc.
361. Should such a situation arise, a Grievance Mechanism has been included in the ESMP for the Digital FSM.

### 11.2. FSM JUDICIARY LEVEL GRIEVANCES

362. The Digital FSM Project level process will not impede affected persons access to the FSM legal system. At any time, a complainant may take the matter to the appropriate legal or judicial authority as per the laws of the FSM.

### 11.3. GRIEVANCE MECHANISM

#### 11.3.1. Introduction

363. The Digital FSM Project allows those that have a complaint or that feel aggrieved by the Digital FSM Project to be able to communicate their concerns and/or grievances through an appropriate process. The GM set out in this ESMP is to be used as part of the Digital FSM Project and will provide an accessible, rapid, fair and effective response to concerned stakeholders, especially any vulnerable group who often lack access to formal legal regimes.
364. While recognizing that many complaints may be resolved immediately, the Complaints Register and Grievance Mechanism set out in this ESMP encourages mutually acceptable resolution of issues as they arise. The Complaints Register and Grievance Mechanism set out in this ESMP have been designed to:
- a. Be a legitimate process that allows for trust to be built between stakeholder groups and assures stakeholders that their concerns will be assessed in a fair and transparent manner;
  - b. Allow simple and streamlined access to the Complaints Register and GRM for all stakeholders and provide adequate assistance for those that may have faced barriers in the past to be able to raise their concerns;
  - c. Provide clear and known procedures for each stage of the GRM process, and provides clarity on the types of outcomes available to individuals and groups;
  - d. Ensure equitable treatment to all concerned and aggrieved individuals and groups through a consistent, formal approach that, is fair, informed and respectful to a complaint and/or concern;
  - e. Provide a transparent approach, by keeping any aggrieved individual/group informed of the progress of their complaint, the information that was used when assessing their complaint and information about the mechanisms that will be used to address it; and
  - f. Enable continuous learning and improvements to the GM. Through continued assessment, the learnings may reduce potential complaints and grievances.
365. Eligibility criteria for the GM include:
- a. Perceived negative economic, social or environmental impact on an individual and/or group, or concern about the potential to cause an impact;
  - b. Clearly specified kind of impact that has occurred or has the potential to occur; and explanation of how the project caused or may cause such impact; and
  - c. Individual and/or group filing of a complaint and/or grievance is impacted, or at risk of being impacted; or the individual and/or group filing a complaint and/or grievance demonstrates that it has authority from an individual and or group that have been or may potentially be impacted on to represent their interest.

## Digital FSM Environmental and Social Management Plan

366. Local communities and other interested stakeholders may raise a grievance/complaint at all times through the FSM Supreme Court and/or the Ombudsman. Affected local communities should be informed about the ESMP provisions, including its grievance mechanism and how to make a complaint.

### 11.3.2. Grievance Mechanism

367. The GM has been designed to be problem-solving mechanism with voluntary good-faith efforts. The GM is not a substitute for the legal process. The GRM will as far as practicable, try to resolve complaints and/or grievances on terms that are mutually acceptable to all parties. When making a complaint and/or grievance, all parties must act at all times, in good faith and should not attempt to delay and or hinder any mutually acceptable resolution.

368. There will be an extensive process of stakeholder consultations undertaken in each activity location, to confirm the technology and site selected. As part of this process, the communities will be informed of the GRM. The information provided will include that the GM is for the entire public as well as for construction, and also for the entire project (not only construction related to Component One).

369. The process for the GM is as follows:

- a. The Aggrieved Person/Party may submit their complaint or grievance in person, by phone, text message, mail or email (including anonymously) to the CIU, DoTCI, FSMTCC (OAE), DHHS, TRA or Contractor; All correspondence will be forwarded to the CIU Safeguards Team for logging into the GM database. The Safeguards Team will keep all records of correspondence, resolution processes and close out.
- b. The agency receiving the complaint or grievance will endeavor to resolve issues within two weeks or pass on within 24 hours to the appropriate agency for resolution within two weeks. Where the Aggrieved Person/Party is not satisfied, the relevant Implementing Agency, CIU Safeguards team or Contractor will refer the Aggrieved Person/Party to the Digital FSM Project Manager. For complaints that were satisfactorily resolved by the Aggrieved Person/Party, the incident and resultant resolution will be logged by the CIU Safeguards Team and reported to the Digital FSM Project Manager. For complaints that were satisfactorily resolved by the contractor, the incident and resultant resolution will be logged by the CIU Safeguards Team and reported to the Digital FSM Project Manager;
- c. If unsuccessful, the complaint will be escalated to the Digital FSM Project Manager;
- d. The Digital FSM Project Manager will endeavor to address and resolve the complaint and inform the Aggrieved Person/Party. For complaints that were satisfactorily resolved by the Digital FSM Project Manager, the incident and resultant resolution will be logged by the CIU Safeguards Team. Where the complaint has not been resolved, the Digital FSM Project Manager will refer to the FSMTCC (OAE) General Manager and Secretary of DoTCI for his/her action/resolution;
- e. If the matter remains unresolved, or the Aggrieved Person/Party is not satisfied with the outcome, the Secretary of DoTCI or the FSMTCC (OAE) General Manager refers the matter to the Project Steering Committee for a resolution. The Digital FSM Project Manager will log details of issue and resultant resolution status;
- f. If it remains unresolved or the complainant is dissatisfied with the outcome proposed by the Project Steering Committee, the Aggrieved Person may refer the matter to the appropriate legal or judicial authority. A decision of the Court will be final; and
- g. Feedback must be provided to the lodger of each step no less than weekly, or more often if suitable.

370. Where the matter is referred to the Digital FSM Project Manager, a resolution should be sought within two weeks. If unsuccessful and the matter is referred to the Project Steering Committee, this should occur within a month.

371. Each record is allocated a unique number reflecting year and sequence of received complaint (for example 2019-01, 2019-02 etc.). Complaint records (letter, email, record of conversation) should be stored together, electronically or in hard copy. CIU Safeguards Team will prepare a monthly report on the GM to the Digital FSM Project Manager. The Digital FSM Project Manager will be responsible for undertaking a regular (at least monthly) review of all grievances to analyze and respond to any common issues arising..

372. Any grievance related to corruption or any unethical practice should be referred immediately to the Ombudsman of the FSM Supreme Court.

### 11.3.3.Complaints Register

373. A complaints register will be established as part of the Digital FSM to record any concerns raised by the community during construction. Any serious complaint will be advised to the World Bank and DoTCI within 24 hours of receiving the complaint. The complaint will be screened. Following the screening, complaints regarding corrupt practices will be referred to the World Bank for commentary and/or advice along with the Ombudsman.
374. Wherever possible, the project team will seek to resolve the complaint as soon as possible, and thus avoid escalation of issues. However, where a complaint cannot be readily resolved, then it must be escalated.
375. A summary list of complaints received, and their disposition, along with key statistics on the number of complaints and duration taken to close out, must be published in a report produced every six months by the CIU Safeguards Team for reporting to the World Bank by the DoTCI and the FSMTCC (OAE).

### 11.3.4.World Bank Complaints Framework

376. In addition to the project GM, complainants have the option to access the World Bank's Grievance Redress Service, with both compliance and grievance functions. The World Bank Integrity Vice Presidency and Grievance Redress Service investigates allegations that World Bank's Standards, screening procedure or other World Bank social and environmental commitments are not being implemented adequately, and that harm may result to people or the environment. A compliance review is available to any community or individual with concerns about the impacts of a World Bank program or project. The Grievance Redress Service is mandated to independently and impartially investigate valid requests from locally impacted people, and to report its findings and recommendations publicly.
377. The Grievance Redress Service offers locally affected people an opportunity to work with other stakeholders to resolve concerns about the social and environmental impacts of a World Bank project. The Grievance Redress Service is intended to supplement the proactive stakeholder engagement that is required of World Bank and its Implementing Partners throughout the project cycle. Communities and individuals may request a Grievance Redress Service process when they have used standard channels for project management and quality assurance and are not satisfied with the response (in this case the project level grievance redress mechanism). When a valid Grievance Redress Service request is submitted, World Bank focal points at country, regional and headquarters levels will work with concerned stakeholders and Implementing Partners to address and resolve the concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Information can be found at <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service> for more details. For information on how to submit complaints to the World Bank Inspection Panel, visit [www.inspectionpanel.org](http://www.inspectionpanel.org).



## 12 INSTITUTIONAL ARRANGEMENTS FOR THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

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378. Chapter 5 of this ESMP describes the broader legal and policy framework relating to Digital FSM. Operational relationships are set out as follows.
379. The project has four implementing agencies, DoTCI, FSMTCC (OAE), TRA and the Department of Health and Human Services and will be responsible for the implementation and compliance with the ESMP, SEP, LMP and Land Access Process. The Safeguards Team of the Central Implementation Unit will support implementation and compliance. The ESMP will be part of any tender documentation especially Component One and will be provided to the contractor as part of the bid process for inclusion in their tender package.
380. Under Component 1 the FSMTCC (OAE) will engage Roll Out Manager who will supervise the contractor. The contractor for Component One will employ an Environmental, Occupational Health and Safety (EHS) Officer to manage all matters related to the ESMP. The contractor's EHS officer will coordinate and be overseen by FSMTCC (OAE) with reference to the DoFA CIU Safeguards team who will develop the safeguard monitoring requirements and will oversee the collection, management and reporting of the daily information. The CIU Safeguards team will periodically undertake site visits to monitor the on the ground activities.
381. The DoFA CIU and/or FSMTCC (OAE) may retain an independent safeguard officer to independently review the scope of works (weekly or biweekly basis) and would then report to DoFA CIU and/or FSMTCC (OAE). Any appointment will be decided on a state by state basis.
382. The contractor undertake specific physical activities will maintain and keep all administrative and environmental records which would include a log of complaint/s together with records of any measures taken to mitigate the cause of the complaints. Further, the contractor will be responsible for the day to day compliance of the ESMP.
383. The contractor's EHS officer will be required to undertake a training and awareness program consistent with FSM and World Bank ESF requirements. The DoFA CIU safeguards team will undertake this training to ensure the safeguards officer has the skill set to complete the tasks associated with the implementation of the ESMP.
384. The remainder of the environmental and social matters for Components Two through Four will be overseen by the DOFA CIU Safeguard team in conjunction with DoTCI, TRA and DHHS.
385. DoFA through the CIU will assist as the entity for fiduciary functions, including procurement, financial management and safeguards support for projects financed by international donors and will provide an oversight function on Digital FSM implementation with support in areas of procurement, finance and safeguards.
386. The safeguards team will be supported by the Environmental and Social Specialists on the World Bank task team. The World Bank task team will be represented by a Task Team Leader and Co-Task Team Leader, who will lead a team of people with different technical specializations.
387. The ESMP and SEP will be implemented for Component 1 by CIU Safeguards Team during design to ensure design matters do not conflict with the ESMP, with periodic review by WB as necessary, prior to design being finalized any works being undertaken. The ESMP identifies potential risks to the environment and social matters from the projects and outlines strategies for managing those risks and minimizing undesirable environmental and social impacts. Further, the ESMP provides a GM for those that may be potentially impacted by the projects that do not consider their views have been heard.
388. CIU will be responsible for the revision or updates of the ESMP during the course of the Digital FSM Project, in consultation with the relevant Implementing Agency(ies).
389. The Contractor will include environmental and social management reports within their weekly and monthly reports to the Roll Out Manager and cc. this report to the CIU Safeguards Team. EHS incidents will be reported within 24 hours.
390. The CIU Safeguards Team are responsible for collating the reporting from Contractors and Implementing Agencies and preparing periodic (at least six monthly) reports to the World Bank as part of Project reporting protocols. This includes EHS incidents and near misses, GM statistics, progress against the ESMP, consultation activities and outcomes, and any foreseeable or impending issues for the next six-month period.

## 13 DISCLOSURE

391. The World Bank has requirements for information disclosure under ESS10, as outlined below in Figure 4.

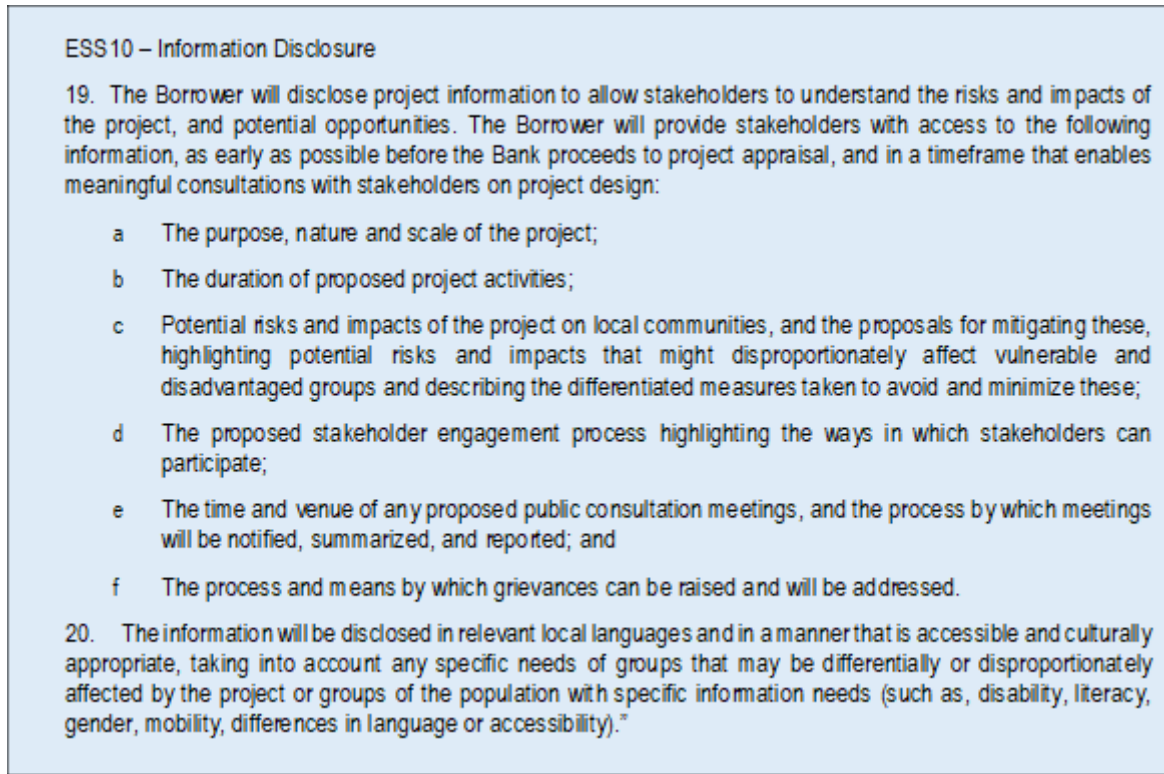


Figure 4 ESS10 Information Disclosure Requirements

392. As part of the requirements of World Bank ESS10: Stakeholder Engagement and Information Disclosure and ESS1: Assessment and Management of Environmental and Social Risks and Impact, the following will be disclosed:

- a. Environmental and Social Commitment Plan (ESCP);
- b. Environmental and Social Management Plan;
- c. Stakeholder Engagement Plan;
- d. Disclosure of project-related information, consultation and effective feedback for community engagement during implementation of the Stakeholder Engagement Plan.

393. The Government of FSM needs to provide sufficient information about the potential risks and impacts of the project for the consultations with its stakeholders. Such information will be disclosed in a timely manner, in an accessible place, and in a form and language understandable to project-affected parties and other interested parties as set out in ESS10, so they can provide meaningful input into project design and mitigation measures. A newspaper advertisement will alert the public to the disclosure of the instruments Likewise, DoTCI and the FSMTCC (OAE) will ensure that copies of all prepared safeguard instruments are available locally at the DoTCI and FSMTCC (OAE) office, easily accessible to interested and affected groups and local NGOs.

## 14 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN MONITORING, EVALUATION AND REPORTING

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395. The contractor for Component One will provide the necessary information as per Chapter 7 to DoTCI and FSMTCC (OAE) as required by this ESMP.
396. The DoFA CIU safeguards team will have coordination responsibility for ESMP monitoring and evaluation of progress, particularly with respect to Component One with the contractor's safeguards officer. Six monthly reports will be prepared by the CIU, in consultation with the Implementing Agencies. Reporting to the World Bank will be undertaken in accordance with Project reporting process.

## 15 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN CAPACITY BUILDING

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### 15.1. CAPACITY DEVELOPMENT

397. DoTCI and the FSMTCC (OAE) do not have in-house safeguards specialists, therefore the DoFA CIU safeguards team will fulfill the Digital FSM safeguards role for the duration of the Digital FSM.
398. The DoFA CIU safeguards team will contribute to capacity building of DoTCI and the FSMTCC (OAE) through the technical support and advisory role delivered during the preparation and implementation of sub-projects, the review of safeguards instruments, and in ESMP monitoring and reporting.
399. Other short-term consultants may be engaged from time to time to perform specific tasks including, as necessary, consultation, awareness raising, monitoring and evaluation, external monitoring of implementation.

#### 1.1.1 Training

400. The CIU safeguards team shall have the skills and expertise to train and mentor local counter-part staff and others. This will be supported by training to be conducted by the World Bank on its Environmental and Social Framework.
401. Areas recommended for DoTCI and FSMTCC (OAE) training include the following –
  - a. World Bank's Environmental and Social Framework, in particular those relevant to the Digital FSM Project;
  - b. Social risks of internet use and available methods to manage risks, including those related to GBV;
  - c. Roles and responsibilities of different key agencies in safeguards implementation; and
  - d. How to effectively integrate the ESMP and SEP into Digital FSM management and implementation.
402. Training in the above areas is recommended to be held within three months of Digital FSM initiation.
403. On-going support will be provided by the World Bank team for the duration of the Digital FSM, including during environmental and social screening of sub-projects and review of prepared safeguards instruments.
404. Delivery organizations have the responsibility for ensuring systems are in place so that relevant employees, contractors and other workers are aware of the environmental and social requirements for construction, including the ESMP/ESMP.
405. All Digital FSM personnel will attend an induction that covers health, safety, environment and cultural requirements.
406. All workers engaged in any activity with the potential to cause serious environmental harm (e.g. handling of hazardous materials) will receive task specific environmental training.

## 16 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN BUDGET

407. A budget has been prepared for the implementation of the ESMP. These items are over and above those considered to be covered by normal operations.

Item	Cost
ESMP Updating and Auditing (consultant)	\$10,000
General ESMP Expenses (travel, printing)	\$20,000
Site Specific Environmental and Social Assessment/s (consultants)	\$50,000
Component One – Stakeholder Engagement for Planning and Construction (Travel, materials, venue hire)	\$150,000
Component One – Consultations and Land Permissions (Travel, materials, venue hire)	\$200,000
Component One – Consultations and Land Permissions for Outer Islands	\$150,000
Component Two and Three – Stakeholder Consultations and Information Brochures (Travel, materials, venue hire)	\$100,000
Additional services (consultants)	\$50,000
Total	\$780,000

408. Construction-related safeguards implementation for Component One will be part of the contractor's budget.

## Annexure One - Summary of Stakeholder Engagement

Workshops and stakeholder meetings were held in August 2019 in all four states of FSM. The main objectives were to ensure that stakeholders understood the proposed project, had the opportunity to raise any concerns that could determine the project design, clarify information provided, and determine stakeholders' attitudes towards the project. The preliminary stakeholder consultations were also an opportunity to identify any major risks that could be anticipated. Details of the consultations are available as part of the Stakeholder Engagement Plan (SEP).

The consultations were based on the information provided to the consultant at the time of the assessment. Subsequent changes in the projects scope of works were not included.

Consultations were held with 74 organizations and agencies, including special interest groups related to gender, youth and disabilities.

State	Information Dissemination and Consultation Meeting	Other Consultations
Yap	6 organizations	11 organizations
Chuuk	10 organizations	9 organizations
Pohnpei	19 organizations	1 organization
Kosrae	10 organizations	3 organizations
National	<i>(no workshop – individual meetings only)</i>	5 organizations

In all consultations, stakeholders indicated that they supported the project and wanted it to commence as soon as possible. They also indicated that they would provide support as needed to resolve any issues that may arise, such as land permissions. Overall, the stakeholders indicated that the project benefits would far outweigh any negative risks or impacts.

The following emerging themes identified in discussions were similar across all states:

- a. **Existing Internet Access.** All states have an existing level of internet access – although somewhat constrained by price, reliability, connection speed and availability. The social risks associated with internet use are already being experienced in FSM. Opportunities to reduce these downside risks are needed, irrespective of this project.
- b. **FSM citizens may be particularly appealing targets** for online scams, fraud and identity theft due to their rights to work, live and study in the USA as a result of the Compact of Free Association between the USA and FSM.
- c. **Legislation and Regulations** – a gap analysis of legislation and regulations is needed to consider the social risks. In some states, law enforcement is also somewhat limited (e.g. Chuuk). It would be recommended that this can be undertaken as soon as possible, even prior to construction.
- d. **Public Perception of FSM Telecommunication Corporation** – in all states, one of the primary concerns raised during consultations by a wide range of stakeholders was the role of FSM Telecom in the project. Public perceptions were that FSM Telecom are not trustworthy, have an anti-competitive stance, and have been providing bad services at high cost. There is a lack of understanding as to why internet hasn't improved already given the fiber landing in three of the four states, which may have partially resulted in misunderstanding of what was delivered under the prior project (submarine cables). Key messaging for ongoing stakeholder engagement should reiterate the separation of roles between the Open Access Entity (OAE), Telecommunications Regulatory Authority (TRA) and FSM Telecom and the possibility of improved competition in the telecommunication retail sector through 'liberalization', which would appear to be publicly supported. The implications of these for end users should also be clearly articulated. Concern was raised regarding economic benefit going to FSM Telecom (national level) rather than being retained within the states.
- e. **Existing Fiber Networks and Associated Infrastructure** – FSM Telecom have installed their own infrastructure in some locations, including fiber networks (e.g. Weno island in Chuuk), and towers in various locations, including some outer atolls. This investment has included funding through grants, and in some cases may not be compatible with being opened to other retailers to use as the market opens. FSM Telecom is continuing to deploy additional infrastructure in new locations concurrently with the Digital FSM preparation process.
- f. **Selection of Outer Islands to be included** – All outer atolls with a population over 100 people are to be included in the project. This is currently estimated at 42 atolls based on data from the last national census in 2010 (and some sampling in 2013). As the next census is scheduled for 2020, this could be an up to date basis for determining which atolls should be included in the project. Atolls often consist of a collection of islands within close proximity to each other, and the population may be over 100 people but distributed across small, proximal islands within the atoll. Further consideration may be needed regarding the criteria to select atolls to be included. Defining the population numbers is

## Digital FSM Environmental and Social Management Plan

complex due to significant fluctuations between school holiday periods, weekends/weekdays due to regular intra and inter-island commuting for schooling and work.

- g. **Viability of Outer islands** – Ongoing maintenance of infrastructure provided to outer atolls will be a considerable challenge and cost. Some of the outer atolls are prohibitively difficult to access (e.g. 25 hours or more by fishing boat in the Mortlock islands, or further in Pohnpei and Yap states). The cost and practicality of maintaining service to outer island communities with little to no formal economy or ability to pay for services would need to be factored into the modeling for the FSMTCC (OAE), to ensure that the infrastructure provided remains viable over the long term and that it is able to benefit low income or vulnerable people. Training locals to be able to undertake maintenance in each atoll could also reduce the overhead costs and response times. Internet services are critical for these remote communities, by providing increased access to government services, welfare, education, health as well as better connectivity to families, friends and social networks. Increased access to communication for emergency response (including boats at sea) would also be potentially life saving.
- h. **Inclusive Access** – irrespective of the provision of physical infrastructure for connectivity through the proposed World Bank grant funding, end users will obtain access to services through a retail provider, of which currently FSM Telecom is the only option. There is a risk that vulnerable groups – low income households (typically female headed, and those with more children), people living with disabilities, the unemployed or those living in remote locations (including the outer atolls) will possibly be unable to access and/or afford internet services. A funding mechanism for service provision to vulnerable communities could be considered (e.g. regulations on pricing, a fund that can support low income households with connection costs, etc.). Another option may be communal services (rather than individual).
- i. **Timelines and Sequencing**. There was significant interest from stakeholders in the project proceeding as soon as possible, with many requests for priority connections (including to the outer islands and Kosrae to correspond with the submarine cable landing). Many were of the opinion that remote communities should be serviced first, however an overall assessment of the priorities would need to be undertaken in conjunction with the procurement team and contractors to see what is viable.
- j. **Engagement of local companies during construction**. There was consistent interest across the country for local labor to be used where possible for construction, given the scarcity of employment opportunities. The FSM labor law requires foreign companies to train locals.
- k. **Government eServices** – there are government eServices already being developed for the health and education sectors. Coordination with these would be needed to avoid duplication of systems under the framework. There was some concern about a national ID system that linked multiple eServices together, although the benefits were also recognized. This would require further consultations with clear representation of what is proposed and the implications. Questions were also raised about if these systems would be national or state level, reflecting some concerns over the centralization of data that may need to be factored into the eServices framework.

Particular concerns in each state include:

### Chuuk

- a. Lack of electricity. A number of the lagoon islands are currently lacking roads, easements and electricity. There are some planned solar electrical mini-grid projects. Some households have private generators, but there is no data available.
- b. Land permission need to be carefully managed, however there is likely to be community and leadership support (formal and traditional) for the project that will support this going forward. Within the lagoon, the current proposal is for fiber cables to be laid on five of the islands in Chuuk lagoon, microwave connections between other lagoon islands and satellite connections to outer islands. This proposal has implications for land permissions, as follows:
  - i. **Weno** – There are existing roads and easements (primary and secondary roads) on Weno, however historically these easements have been problematic for infrastructure development. There has been community resistance to digging, which is seen as being particularly intrusive (e.g. for underwater pipes or other services), although there is an ADB grant to assist with underground water supply on Weno. Chuuk is also subject to typhoons that impact overhead cables. FSM Telecom have built an above ground fiber network around Weno with grant funding; however, it is unclear if this network is suitable or compatible to being opened to other retail providers.
  - ii. **Tonoas** – There is a section of road on Tonoas with easements, however other parts of the island do not have public land - this would need to be negotiated for the project to proceed. There is another World Bank project that may also be involved in road construction in Tonoas.

## Digital FSM Environmental and Social Management Plan

- iii. **Fefan, Udot and Uman** – these islands lack existing roads or public easements, as they were not agreed to by the landowners previously. If the proposed fiber cables are to proceed, significant negotiations would be needed regarding land permissions on these islands. In the event that new technologies (such as 5G) are imminent, the time and cost of this process may not be warranted. The island of Udot through a sister WB project is developing a solar mini grid system that will include power cable burial to service all households on the island. Community agreement has been reached to utilize community walking tracks and as such Digital FSM project may be able to piggy-back on this system.
  - iv. **New base stations** are proposed for the Faichuk islands (3), Parem (1), Fefan (2), Tonoas (1) and Uman (2). For all of these, appropriate sites would need to be identified and a suitable land parcel negotiated with the local landowners.
  - v. **Existing base stations** are proposed to be upgraded used on Romanum (1), Fred (1), Takuro (1) and Weno (6).
  - vi. **Outer Islands** – it is proposed that 4G LTE towers will be sited on public land associated with existing government facilities (schools, health clinics, solar generation sites, cell phone sites, etc).
- c. There are opportunities for coordination with other planned infrastructure projects, including
- i. World Bank Infrastructure Grant – will likely be used for road construction on Tonoas
  - ii. World Bank Energy Project – if cables are laid between the lagoon islands, then it could be worth considering laying fiber cables at the same time (although the cost benefit of this would need to be considered). There may be additional opportunities to share sites for solar panels and telecommunication towers with this project (see Udot above).
  - iii. ADB grant for a new water system on Weno, implemented with the Chuuk Power Utility Corporation (CPUC). This project is planning to run underground water pipes around Weno.

### Kosrae

- a. Road Alignments – on Kosrae, there are two new proposed roads (realignment of a coastal road and a new cross-inland route). The fiber location should be considered in the context of these roads, noting that the coastal road is proposed to relocate due to rising sea levels, however, also services a number of existing households.
- b. Walung Community – this community are currently difficult to access by a gravel road in disrepair, or by boat from the airport. The community are supportive of the project. There is no road in the community or existing easement, however the state government supported by an ADB project are currently in the process of obtaining permissions from landowners for an electricity project to run a cable along the same route as a fiber cable. A site for a microwave tower would also need to be confirmed (potentially on the existing school site) and formally agreed with the community. On the other side (near the airport), the WIMAX tower would also need to be sited with suitable land identified and negotiated.
- c. Easements under Review – over 1,000 easements around Kosrae are currently under review to confirm that they are valid. This will be completed prior to project commencement and will ensure that they are robust and less likely to be challenged.
- d. Foreign Workers – there have been issues in Kosrae with regards to foreign workers and prostitution, including underage. There are also issues of workers leaving children behind with local women.

### Pohnpei

- a. Existing Government eServices – there is an existing system being developed by the Department of Education containing student and staff records. Similarly, there is an existing system being developed by the Department of Health for eHealth records.
- b. Significant concern regarding FSM Telecom – interest in understanding the future possibility of FSM Telecom and FSM TCC-OAE becoming one entity and retaining monopoly over service provision.
- c. Human Trafficking Prevention – more support was requested in this area, especially given the increased risks and exposure of more internet access.



Yap

- a. Rumung community (Yap Proper) – currently have no electricity, copper telephone cable and only basic roads (no easements). The community were interested in being included as part of the current project. They have a cell site currently through FSM Telecom; and
- b. Village groups – there may be some land issues where houses are built behind other houses in clusters. Strategies for these scenarios will need to be developed and could include a community based wireless distribution option.

Key Recommendations resulting from Consultations:

- a. The project was requested to address **Community Awareness Raising**, including:
  - o Parental awareness raising program regarding online risks to children (including grooming and violent or explicit content) and parental control options (delivered through schools and NGO/CBOs);
  - o Cyber-bullying awareness raising campaign (schools and parents);
  - o Broad community awareness raising on scams, fraud, viruses, hacking and identify theft;
  - o National reporting line for online scams, fraud, etc.; and
  - o Regional Cyber-Crime Cooperation, including human trafficking.
- b. **Maintenance capacity building** in remote locations, including outer islands, also needs to be considered.
- c. **Gap analysis for Legislation and Regulations** – preferably to be undertaken as soon as possible, such that any updates have time to be implemented prior to the increased service provision being available. This also applies to the awareness raising program above.
- d. **Land permission** – Further consideration is needed regarding the proposed infrastructure for Chuuk state, given the constraints of land permissions within some of the Chuuk lagoon islands.
- e. **FSM Telecom** – The public will need clear messages regarding the roles of FSM Telecom and the FSMTCC (OAE), as well as the regulator (TRA). A strong regulator will be a key component to ensuring public value for money and affordable services, and this will need to be implemented in practice as well as clearly communicated to the public.
- f. **Cultural Awareness Training and Health Testing for Workers** (no bikinis, no photos of stone money banks, no trespassing on private land) before arriving, as well as STD and other communicable disease (e.g. TB) testing (work with public health).
- g. **Locals Workers** should be engaged for construction works where possible.

Consultations were undertaken in each state and at the national level in August 2019. The organizations and agencies consulted are outlined below.

State	Information Dissemination and Consultation Meeting	Other Consultations
National	N/A	Central Implementation Unit (DoFA) Telecommunication Regulatory Authority Attorney General's Office Human Trafficking Project National Police
Yap	Department of Public Works FSM Telecom Yap Chamber of Commerce Yap State Public Service Corporation Manta Ray Bay Resort Media and Protocol	Attorney General's Office Director of Health Environmental Protection Authority Yap Chamber of Commerce Land and Marine Resources Yap Women's Association Senator and Chief – Rumung Island Governor and Senators / Legislature Council of Chiefs – Pilung (Yap Proper)

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		Council of Chiefs – Tamol (outer islands) Others (Lubuw, Margery, Bill Ackers)
<b>Chuuk</b>	Chuuk Public Utility Corporation (CPUC) Department of Transportation and Public Works Legislature Department of Education Department of Health Services Chamber of Commerce FSM Telecom Economic Commission Department of Administrative Services Mortlock Islands Development Authority (MIDA)	Governor Attorney General Department of Resources (Land and Marine) EPA Chuuk Youth Council Lagoon Islands Representatives (Fefan) Chuuk Women’s Council Chuuk Power Utility Corporation (CPUC) Chuuk Outer Islands Representatives (Mortlock Islands)
<b>State</b>	<b>Information Dissemination and Consultation Meeting</b>	<b>Other Consultations</b>
<b>Kosrae</b>	Department of Transportation and Infrastructure FSM Telecom Governor Attorney General Senators with Legislature Department of Administration and Finance Department of Resources and Economic Affairs Municipality Representatives Project Management Office Small Business Center	Walung Community Consultation Workshop Governor Department of Resources and Economic Affairs
<b>Pohnpei</b>	Lt. Governor Division of Budget/Finance Department of Health and Social Services Department of Resources and Development Attorney General's Office Department of Education Department of Land Outer Island Chief Executives (Municipality Representatives) Pohnpei Housing Authority FSM Telecommunications Corporation PREL Office of Fisheries and Aquaculture (OFA) Public Affairs Office Pohnpei Consumer's Association (Disability) Pohnpei Transportation Authority Pohnpei Environmental Protection Agency Pohnpei Community Health Center Micronesia Conservation Trust (NGO) USAID Climate Ready (NGO)	Department of Social Affairs – Gender representative

## Annexure Two - Description of Bio-Physical Environment

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The following section provides an overview of the bio-physical environment of the four states of the FSM.

### Geology, Topography and Soils

#### National

The geology of Micronesia is complex, comprising six distinct geological subregions varying in age from about 97 million years in the Marshall Islands, the oldest coral atolls on earth, to relatively young islands with active volcanoes in the Northern Marianas. Yap is formed from upraised continental crust.

There are four types of island these being:

- a. Volcanic 'High islands' which can be highly rugged in their basalt interiors and typically surrounded by fringing or barrier reefs;
- b. Low lying atolls;
- c. Raised coral islands; and
- d. Low coral islands.

#### Chuuk

Chuuk is a large archipelago with mountainous volcanic islands surrounded by a string of coral islets on a barrier reef. There are 19 high volcanic islands within Chuuk Lagoon. The coastal lowlands consist largely of mangrove swamps, freshwater marshes, beaches and raised beach deposits. The uplands make up approximately 73% of the islands, and the coastal lowlands about 27%.

Soil scientists determined that there are about 13 different kinds of soils in Chuuk.<sup>8</sup> The soils in the mountainous areas, except those that are too steep, are moderately deep to very deep and are well drained. These upland soils are generally well suited to subsistence farming and woodland. Most of the soils of the coastal lowlands are limited for agriculture due to wetness.

#### Kosrae

The island of Kosrae is characterized by steep, rugged mountains, and dense jungle in the interior. Several mountain peaks are about 600 m above sea level. Adjacent to the steep mountains and extending in some areas to the shoreline are nearly level to gently sloping foot slopes, alluvial fans and bottom lands. Mangrove swamps and sandy coastal strands surround much of the island. The mountainous areas make up approximately 70% of the island, foot slopes, alluvial fans and bottom lands about 15% and the remainder mangroves and coastal beaches.

It has been determined that there are about 17 different kinds of soil on Kosrae. The soils in the mountainous areas are generally moderately deep to shallow, well drained, and gravelly or cobbly, derived dominantly from basic igneous rock. The soils in the bottom lands are level to nearly level, very deep and somewhat poorly drained to very poorly drained. They formed in alluvium derived dominantly from basic igneous rock and inorganic deposits. The soils on the coastal strands and in coastal tidal marshes are level and nearly level, moderately deep and very deep, and are somewhat excessively drained and very poorly drained. They formed in alluvium derived dominantly from basic igneous rock, water- and wind- deposited sand derived dominantly from coral, and organic deposits.

#### Pohnpei

Pohnpei is a high volcanic island, having a rugged, mountainous interior with peaks as high as 798 m above sea level. The mountains of Pohnpei are the highest in the FSM. Pohnpei consists of one main island surrounded by an inner coral reef, 23 small basaltic islets, a number of inshore deposit islet, and an outer encircling barrier reef with about 15 low coral islets. The outer reef and the inner fringing reefs are separated by a relatively deep lagoon ranging from 1.5 to 8 km across. Within the lagoon are the basaltic and inshore deposit islets. In the southeastern section, there is no lagoon, as the outer barrier and inner fringing reefs have been joined together.

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<sup>8</sup> Laird, W. E., (1980) Soil Survey of Islands of Truk, Federated States of Micronesia. US Department of Agriculture, Soil Conservation Service.

Both the outer barrier reef and the main volcanic island are roughly pentagonal in shape. Pohnpei is about 21 km in diameter and 112km in circumference. Including lagoon islands, the land of Pohnpei covers approximately 340km<sup>2</sup>. The soils of the island of Pohnpei are grouped into 18 different types.<sup>9</sup>

### Yap

The Yap Islands comprise an island arc system on the eastern convergent margin of Philippine Plate. They are composed of continental crust and consist of two distinct sequences: ancient weathered volcanic rock and weathered metamorphic schists, accompanied by coral sand and mangrove mud. The islands are surrounded by a broad fringing barrier reef. Yap has a gentle topography, rising to a maximum elevation of about 175m on Mt. Matade. Strong hydrothermal alteration is observed everywhere and might have played a role in producing poor soils for vegetation or for other agriculture.

The soils in the southern part of the island of Yap are mainly nearly level, they are on a dissected bench and are underlain by very soft volcanic breccia. The soils in the northern part are hilly and mountainous. They are underlain mainly by green, chlorite, and talc schist and amphibolite that are very hard to soft, but in a few areas, they are underlain by weathered volcanic breccia. Soil scientists have determined that there are about 16 different soil kinds on the islands of Yap. The soils range widely in texture, natural drainage, depth, fertility and other characteristics.

The soils on the coral limestone islands are nearly level, somewhat excessively drained, very deep and sandy or are steep, well drained, shallow and loamy and are associated with rock outcroppings. The upland soils are mostly nearly level to steep, well drained or somewhat poorly drained, and fine textured. Most areas of these soils are well suited to agricultural forest crops.

The soils on bottom lands are level to nearly level, somewhat excessively drained to very poorly drained and sandy, clayey, or mucky. They are mostly in small areas adjacent to the coast. The very poorly drained soils are well suited to the production of taro.

### Seismic Activity

Most of the islands in FSM are situated in a relatively quiet seismic area (for example, Pohnpei is located in a seismic Zone 1 as classified by the Trust Territories of the Pacific Islands Design Criteria 1970). The exception is the island of Yap, which is situated close to the Pacific "ring of fire" (Figure 5) These tectonic plate boundaries are extremely active seismic zones capable of generating large earthquakes and, in some cases, major tsunamis that can travel great distances.

While significantly damaging earthquakes have not been observed in recent times, FSM is subject to large tsunamis, as evident by the large tsunami run-ups of 1837, 1849 and 1899, which caused death and destruction in the Caroline Islands. Pohnpei island has not been affected the serious damage by earthquake since 1971.

Yap has a 40% chance in the next 50 years of experiencing, at least once, light to moderate levels of ground shaking. These levels of shaking are expected to cause minor damage to well-engineered buildings. Much lower levels of shaking are expected in the other main islands of FSM. In terms of expected annual economic-social wealth (EWS) loss risk due to earthquakes, FSM sits in the second lowest zone

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<sup>9</sup> M. Onjo, T. Kitagaki, N. Miyauchi, S. Tominaga and M. Hayashi (1995) Preliminary Report on Soil Conditions in Pohnpei Island. Kagoshima Univ. Res. Center S. Pac, Occasional Papers, No. 26, 5-7.

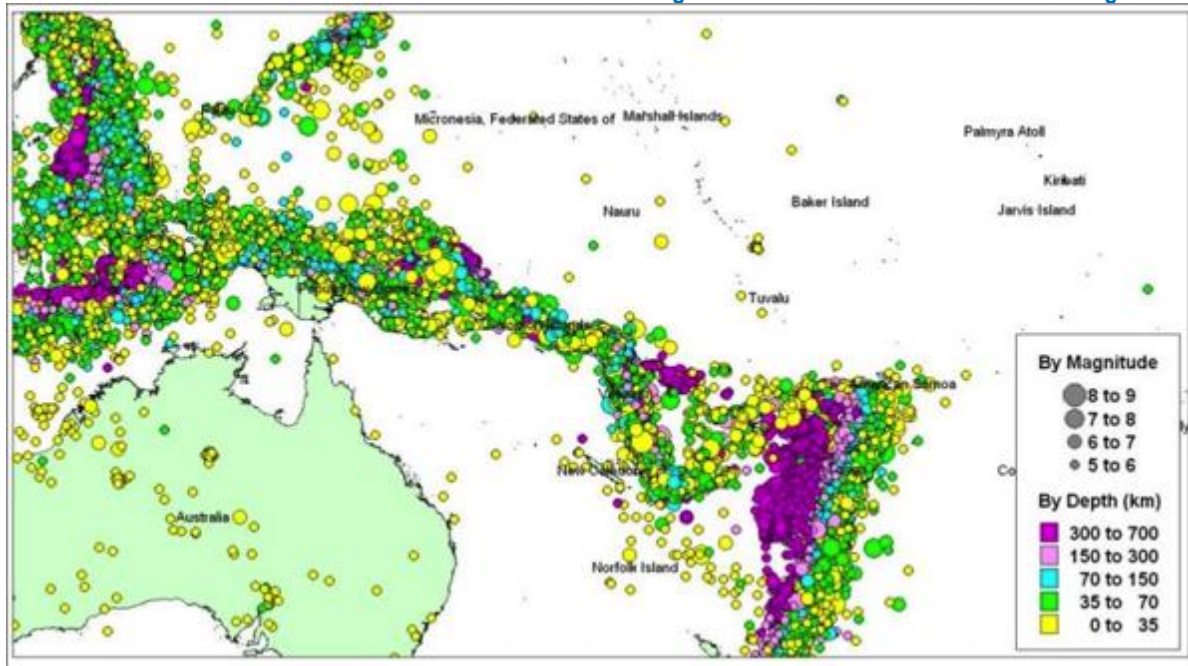


Figure 5 Epicenters of earthquakes in the west Pacific Islands region<sup>10</sup>

## Unexploded Ordinances

FSM has a slight issue with unexploded ordinances (UXO) dating back to the Japanese occupation of the islands during World War II.<sup>11</sup>

## Climate

FSM lies near the Equator in an immense ocean; therefore, the climate is generally tropical (warm and humid). Temperatures vary little, with yearly temperatures averaging 27°C, with the difference between the warmest and coolest month being only a few degrees. The country has two seasons – a dry season from November to April and a wet season from May to October. Figure 6 shows the monthly maximum, mean and low temperatures for Pohnpei and Yap.

The islands are subject to typhoons and receive frequent heavy rains from May through November. Micronesia can be affected by tropical cyclones of the North Pacific Ocean, known in this area as typhoons. Typically, typhoons occur from April to December, although they are more frequent between August and November. However, since the sea is always warm, sometimes they can also occur from January to March, although usually during this period tropical depressions not intense are formed. The states of Chuuk and Yap receive the majority of typhoon events.

Rainfall in the FSM is affected by the movement of the Intertropical Convergence Zone. This band of heavy rainfall is caused by air rising over warm water where winds converge, resulting in thunderstorm activity. It extends across the Pacific just north of the equator (Figure 6). The wet season occurs when the Intertropical Convergence Zone strengthens and moves north close to the Federated States of Micronesia. The West Pacific Monsoon also impacts rainfall, bringing additional rain during the wet season. The Monsoon is driven by large differences in temperature between the land and the ocean, and its seasonal arrival usually brings a switch from very dry to very wet conditions.

The FSM's climate varies considerably from year to year due to the El Niño-Southern Oscillation. This is a natural climate pattern that occurs across the tropical Pacific Ocean and affects weather around the world. In Pohnpei, El Niño tends to result in drier conditions during the dry season, but higher than average rainfall during the wet season. La Niña tends to bring above average rainfall in the dry season. The West Pacific Monsoon affects the western states of Chuuk and especially Yap more than the eastern states of Pohnpei

<sup>10</sup> Rong, Park, Duggan, Hahdyiar and Bauzzurro (2012) Probabilistic Seismic Hazard Assessment for Pacific Island Countries. 15 WCEE Lisboa 2012.

<sup>11</sup> Landmine Monitor Report 1999: Toward a Mine-free World by International Campaign to Ban Landmines

and Kosrae. It tends to be farther east during El Niño, bringing higher rainfall, and in a more western position during La Niña, resulting in less rainfall. The Intertropical Convergence Zone results in less rainfall during El Niño events and more during La Niña

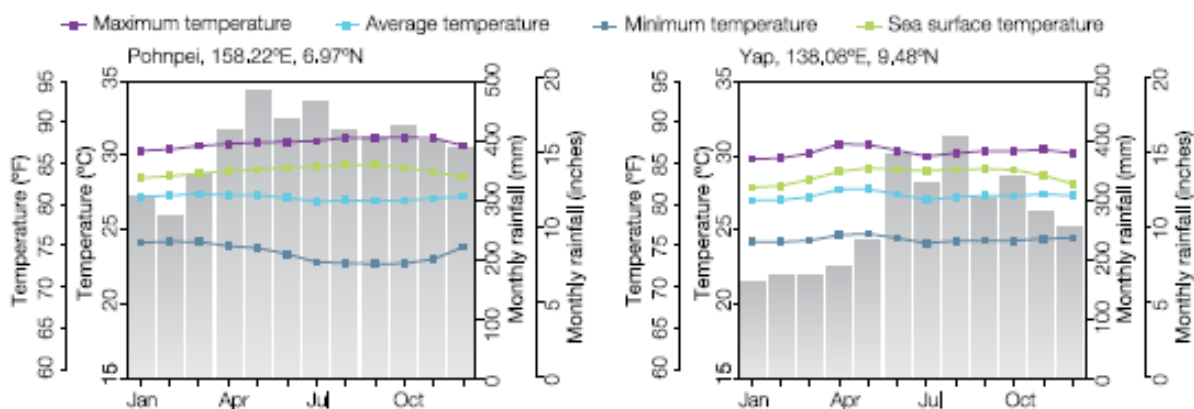


Figure 6 Monthly air temperatures for Pohnpei and Yap<sup>12</sup>

## Air Quality

Outdoor air pollution is a mix of chemicals, particulate matter, and biological materials that react with each other to form tiny hazardous particles. It contributes to breathing problems, chronic diseases, increased hospitalization, and premature mortality.

The concentration of particulate matter (PM) is a key air quality indicator since it is the most common air pollutant that affects short term and long-term health. Two sizes of particulate matter are used to analyze air quality; fine particles with a diameter of less than 2.5 microns ( $\mu\text{m}$ ) or PM<sub>2.5</sub> and coarse particles with a diameter of less than 10  $\mu\text{m}$  or PM<sub>10</sub>. PM<sub>2.5</sub> particles are more concerning because their small size allows them to travel deeper into the cardiopulmonary system.

The World Health Organization's (WHO) air quality guidelines recommend that the annual mean concentrations of Parts per Million (PM) 2.5 should not exceed 10  $\mu\text{m}/\text{m}^3$  and 20  $\mu\text{m}/\text{m}^3$  for PM<sub>10</sub>.

No data for ambient air quality for FSM is available. The small size of the islands and prevalence of strong maritime winds ensure that any air emissions from vehicles, stationary sources or fires is quickly mixed with clean air and no pockets of lower air quality are likely to exist.

Pohnpei EPA Air Pollution Control Standards and Regulations S.L. No. 2L-12-80 have set air quality standards, which are the desirable levels of air quality for the State of Pohnpei. At these levels, air pollutants are not expected to produce health hazard or impairment, injury to agriculture crops and livestock, damage to or deterioration of property, and hazards to air and ground transportation, or in any manner, interfere with the protection of the public welfare.

## Ambient Noise

Environmental Health and Safety (EHS) guideline levels for ambient noise levels for urban areas are 55 dBA (day) and 45 dBA (night). Noise monitoring undertaken for the Pohnpei Port Development Project<sup>13</sup> gives an indication of the typical ambient noise for urban areas in FSM (Table 17). It is expected that the noise in urban areas would be lower than that observed at the port during the monitoring.

<sup>12</sup> Australian Bureau of Meteorology

<sup>13</sup> ADB (2013) FSM Pohnpei Port Development Project, Initial Environmental Examination. Project No. TA 8143-FSM

Sampling Location	Noise Level (dBA)	
	Day	Night
Kolonia Town area (urban)	48.2	34.7
PPA Admin carpark	54.7	45.8

Table 17 Ambient noise levels in Pohnpei (ADB 2013)

## Terrestrial Ecology

The FSM has in general high levels of species diversity and endemism considering its small size. The oceanic islands of the FSM are critical storehouses of biodiversity. Major vegetation types in the FSM are cloud forest, native upland forest, palm forest, agroforest, secondary vegetation, savanna grass and fern lands, freshwater marsh, swamp forest, mangroves, atoll forest, limestone forest of rocky coasts and beach strand. The country forms part of two Global 200 World Wildlife Fund (WWF) ecoregions, namely the Yap Tropical Dry Forest and the Caroline Tropical Moist Forest Ecoregion, and forms part of the Polynesia/Micronesia Hotspot.

Over 1,239 species of ferns and flowering plants have been described in the FSM. Approximately 782 species are native, including about 145 species of ferns, 267 species of monocots and 370 species of dicots. Approximately 175 of these plants are considered endemic to the FSM. Micronesia as a bioregion is considered to have amongst the highest density of endemic plants in the world with each State in the FSM characterized by its own suite of endemic plant species (Yap 9, Chuuk 16, Pohnpei 47 and Kosrae 18 endemic plant species).

Terrestrial ecosystems are also home to many unique avian, mammalian, reptilian and other species, including owls, flying foxes, parrots, giant geckos, skinks, dragonflies, freshwater gobies and land snails: 27 species of reptiles and amphibians (four endemic); four species of fruit bats (flying foxes) of the genus *Pteropus* (*P. molosinnus*, *P. insularis*, *P. phaeocephalus*, and *P. ualrus*) and a single endemic sheath-tailed bat of the genus *Emballonura*; and, 234 species of birds including 19 endemics, 20 threatened, two (2) extinct and 13 introduced<sup>14</sup>. Endemic species include two (2) monarchs (Truk *Metabolus rugensis* and Yap *Monarcha godeffroyi*), 2 flycatchers (Pohnpei *Myiagra pluto* and Oceanic *Myiagra oceanica*), Pohnpei fantail (*Rhipidura kubaryi*), Pohnpei flycatcher (*Myiagra pluto*), long-billed white-eye (*Rukia longirostra*), Pohnpei lorry (*Trichoglossus rubiginosus*), Caroline Islands Ground-Dove (*Gallinolumba kubaryi*), Mariana Fruit-Dove (*Ptilinopus roseicapilla*), and the Critically Endangered Pohnpei mountain starling (*Aplonis pelzeni*). The current status of most of these species is unknown due to lack of ongoing or systemic monitoring, and lack of understanding of species habitat and ecological requirements.<sup>15</sup> There are also indications that the invertebrate fauna of the FSM is also rich and interesting, however data is still limited

## Invasive species

Invasive Alien Species (IAS) are the greatest threat to biodiversity in the Pacific Islands, contributing to the loss of native species including endemics and traditional varieties of crops, and impacting on food security and tourism. Moreover, the threat has increased as island nations develop, resulting in greater mobility among people, goods, and supplies.

FSM is no exception and in the last 150 years over 457 new plants have been introduced to the FSM, which amounts to 37% of the 1,239 described species of terrestrial flowering plants and ferns. Introduced species account for 22% of plants in Kosrae, 40% in Pohnpei, 37% in Chuuk and 39% in Yap. Native terrestrial mammals are limited to six taxa of fruit bats, of which five are endemic, and the rest are introduced: three rat species, mouse, Philippine deer, and domesticated animals including livestock. Thirteen introduced bird species have been recorded, including pheasants, doves, parrots, munias and the Eurasian Tree Sparrow (*Passer montanus*). Amphibians are not native to FSM and the only species is the introduced cane toad (*Rhinella marina* syn: *Bufo marinus*). Of the 27 species of reptiles, five are endemic and two are likely to have been introduced.

A number of the invasive species entered Micronesia as a result of World War II. More recently, invasive species have been spread by equipment used in road construction, and through western style agricultural projects.

<sup>14</sup> <http://avibase.bsc-eoc.org>

<sup>15</sup> FSM Department of Resources and Development Division of Resource and Development, Agriculture Program and Marine Program. Ridge to Reef Project Document R2R5517

## Surface Water

### Chuuk

Most of the islands of Chuuk lagoon are too small to have large and long rivers. The high islands have a number of small streams. Only on Weno and some of the bigger islands do larger, significant rivers flow occur. The amount of water in them varies with rainfall. After rainfall, much water flows through the streams, while during dry periods, most streams dry up. They are active only during and following rainy weather. Few streams flow during the entire year. Unfortunately, due to uncontrolled dumping of solid waste and pollution from human and animal waste products, the quality of surface water is generally poor on Chuuk.

Only Weno and a few of the largest islands in Chuuk Lagoon have public water supply. Everyone else, on high islands as well as low islands, must secure their own water. On high islands, people can get water from small streams and on low islands from shallow wells. However, to have clean water that is good for drinking, the majority of people use rainwater harvesting systems to capture roof water.

### Kosrae

Kosrae is an extremely wet island. The relative humidity of air is always about 80-90%. The rainfall is well distributed throughout the year and there is no noticeable dry season. Droughts are extremely rare on Kosrae. The last significant one was in 1983.

The abundance of rainfall feeds many streams and rivers. The streams and rivers run quickly through narrow valleys in steep mountain slopes but slow down when they reach the lowlands. They empty into the mangrove swamps and reefs around the island. Some of the most significant rivers on Kosrae are Finkol, Innem, and Okat, which flow to Utwe, Lelu, and Okat harbor, respectively

People who live in areas where public water supply is available rely on it for most of their needs. However, in some rural areas, particularly in the village of Walung in southeastern part of Kosrae, people obtain water of quality good enough for drinking only by capturing rain.

### Pohnpei

Pohnpei is one of the world's wettest places. On the average, it receives almost 5 meters of rain per year, with higher regions and mountain peaks getting over twice that much. Rainfall is distributed evenly throughout the year (only January through March receive somewhat less rain than other months). This abundance of rainfall feeds over 40 rivers and many smaller streams around the island. Most never dry out.

After major rainfall, which is quite common on the island, streams and rivers reach flood levels and torrents rush down mountain slopes. As they reach lowlands, where terrain is less steep, the rivers slow down and flow in wider valleys. They empty into the mangrove swamps and the lagoon around the island.

People who live in densely populated parts of Pohnpei, particularly the town of Kolonia, get their water from the municipal supply. In rural areas, people use water from nearby streams for most of their needs. However, as the quality of water in streams is generally not good enough to be used as drinking water without treatment, many people rely on catching rainwater into tanks and using it as primary source of water for drinking, cooking, and other needs.

### Yap

Yap is the driest state in FSM. Average annual rainfall over the Yap Islands amounts to approximately 3 meters. Rainfall-runoff comparisons indicate that about half of the annual rainfall runs off to the ocean on Yap Island and Gagil-Tamil. Streams on Gagil-Tamil are perennial but streams on Yap Island are dry an average of 3 months per year due to geologic differences. Analyses of water samples from 23 sources in 1983 showed the good quality and the chemical similarity of surface and ground water.

As good public supplies of fresh water are available across the island, including in rural communities, most people do not maintain rainwater catchments for their drinking water. Only in certain areas, particularly the island of Rumung (highly traditional place separated by a channel from the rest of Yap Proper) and some of the newer settlements inhabited by people from the outer islands, the lack of suitable public supply requires communities to maintain rainwater catchment tanks.

## Groundwater

Groundwater resources vary from State to State and island to island. The following provides a high-level summary of groundwater given the project is unlikely to have any impact on groundwater.



### Chuuk

On high islands of Chuuk, the rocks are not very porous and contain little groundwater. Nevertheless, people have drilled wells and extract groundwater for public supply. Though the wells do not yield a lot of water, they are an important source as streams and rivers are insufficient to meet human demand.

On the low islands of Chuuk Lagoon, streams are absent altogether and all rainfall goes into the ground. That is because the rocks on low islands are very porous. Shallow rocks are permeated by fresh water, which rests atop of salty water that permeates deeper rocks. People on low islands can get freshwater from very shallow wells, just about 500mm below the ground surface.

### Kosrae

Kosrae has relatively little water that seeps through the soil and into cracks and pores in the volcanic rocks, but as surface water is plentiful on Kosrae, groundwater is not an important water source for residents. There are, however, many natural springs that issue water from the ground and are highly respected as sources of water of excellent quality.

### Pohnpei

The volcanic rocks on Pohnpei are not very porous so little of it seeps through the soil and into cracks and pores. None the less, many natural springs exist.

The outer islands are low coral atolls, which means they are composed of limestone and sand, which are highly porous and unable to retain water. Freshwater is trapped as freshwater lens that float atop the deeper, salty groundwater. The availability of fresh groundwater depends on island size and rainfall and diminishes during droughts.

### Yap

The bedrock on Yap is metamorphic and volcanic. It yields little groundwater; however, groundwater is important in absence of other sources.

## Annexure Three - Social Assessment

This social assessment has relied on secondary data sources to profile the beneficiary population as a basis for stakeholder consultations and social risk assessment. A number of consultations have also been undertaken in each state in August 2019. These are documented in the Stakeholder Engagement Plan (SEP).

### History and National Identity

The Caroline Islands were settled over 4,000 years ago by ancestors of the Micronesians. A decentralized chieftain-based system eventually evolved into a more centralized economic and religious empire, based principally in Yap and Pohnpei<sup>16</sup>. FSM was colonized by Germany in 1898 and occupied by Japan in 1914. It was a major battleground during the second world war, resulting in numerous war relics (including shipwrecks and unexploded ordinances)<sup>17</sup>.

FSM has been an independent nation since 1986, when a Compact of Free Association between the United States and FSM (Compact) came into effect in 1986, and a member of the UN since 1991. The Compact provides substantial economic support to the FSM (60% of the budget in 2019<sup>18</sup>) and the relationship with the USA allows FSM citizens to reside, work and study in the USA<sup>19</sup>.

The four states of FSM are highly autonomous, with their own governments and legislation that fall under an overarching national system. Each state has considerable autonomy within the federation and are diverse in terms of language, cultural norms and land tenure.

The sociocultural variance across the country has resulted in difficulties in creating a sense of national identity. The Compact with the USA has contributed to the emergence of a national identity given its economic and political importance; however, this rarely supersedes the importance of local identity as part of distinct ethnic groups with particular traditions and values<sup>20</sup>. The idea of “unity in diversity” is in the preamble of FSM’s constitution: *“To make one nation of many islands, we respect the diversity of our cultures. Our differences enrich us. The seas bring us together, they do not separate us”*.

There has been a long-standing movement for independence in Chuuk state, culminating in a referendum that was scheduled for March 2019 that was postponed until 2020 under concerns of it being unconstitutional<sup>21</sup>.

FSM is classified by the World Bank as a lower-middle income country (2019).

### Population

The overall population of FSM is estimated to be 112,640 (World Bank, 2018), of which approximately 45 percent live in Chuuk, 37 percent in Pohnpei, 11 percent in Yap, and 7 percent in Kosrae. Whilst the population of the country declined between 1997 and 2010, the population has consistently grown from 2010 to 2018. There is internal migration between the states, with the population of Chuuk declining by 11% between 2000 – 2013 and the population of Pohnpei increasing by 13% over the same period<sup>22</sup>. During the same period the population of Yap and Kosrae has remained relatively stable.

Internal migration to the capital, Palikir, in Pohnpei state, is driven by employment with the National Government and generally higher access to basic services. There is also outward migration of approximately 2% of the population per year due to the Compact.

As per many Pacific Island countries, the population structure is heavily weighted in favor of youth, with approximately 40% of the population under 15 years of age in 2005, according to the United Nations (UN). Only 4% of the population was over 65 years of age in 2005. According to the UN, the annual population rate of change for 2005–10 was expected to be 2.1%, a rate the government viewed as too high. As of 2005, the projected population for the year 2025 was 115,000.

<sup>16</sup> <https://www.globalsecurity.org/military/world/oceania/fsm-history.htm>

<sup>17</sup> <https://www.bbc.com/news/world-asia-pacific-15494620>

<sup>18</sup> <https://www.abc.net.au/radio-australia/programs/pacificbeat/chuuk-independence-vote-pushed-back-another-year/10870644>

<sup>19</sup> <https://www.bbc.com/news/world-asia-pacific-15494620>

<sup>20</sup> <https://www.everyculture.com/Ma-Ni/Federated-States-of-Micronesia.html>

<sup>21</sup> <https://www.abc.net.au/radio-australia/programs/pacificbeat/chuuk-independence-vote-pushed-back-another-year/10870644>

<sup>22</sup> Source: FSM 2000 Population and Housing Census Report (2002); FSM Division of Statistics and FSM Poverty Profile of FSM (2017, World Bank)

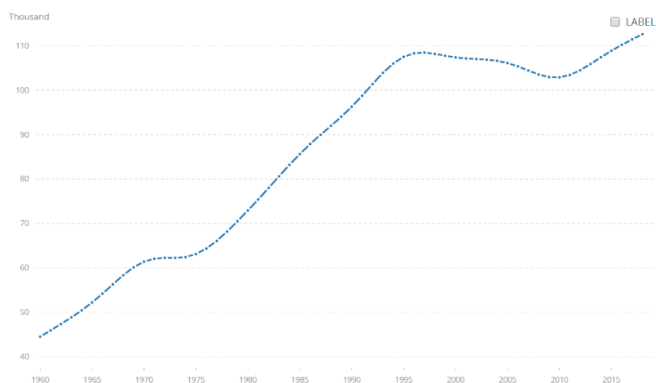


Figure 1 – FSM Population (World Bank Open Data, 2019)

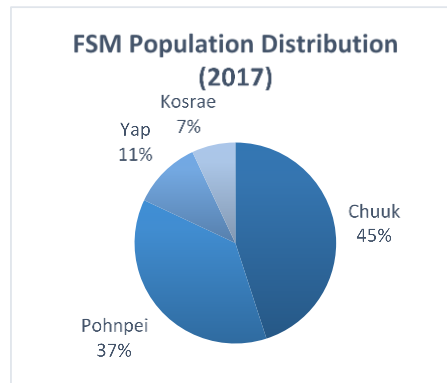


Figure 2 - FSM Population

## People, Culture, Language and Religion

FSM is the largest and most diverse part of the greater Micronesian region. The vast majority of the population are indigenous and ethnically Micronesian. There is a small portion of the population of Pohnpei state who are of Polynesian origin. Ethnicity and indigenous status are the basis of a broad cultural similarity across the country. However, the relative historical isolation of the islands, driven by the geography of the country spread over a vast ocean area, has resulted in different customs, practices and strategic interests developing in each island and village, including class, kinship and religious affiliation. As of 2004, most of the population is Christian, with only 4.6% either professing another or no religion<sup>23</sup>.

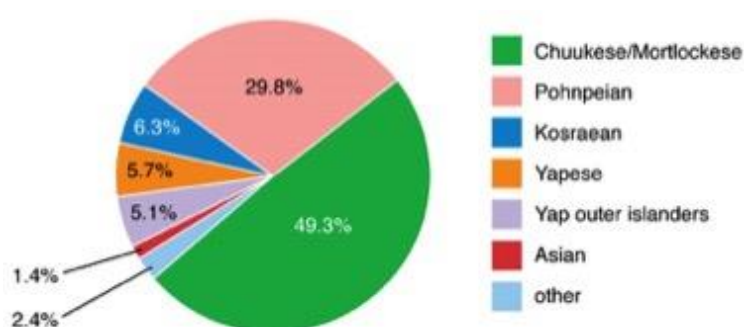
**Language and Cultural Diversity**

“The cultural diversity is typified by the existence of eight major indigenous languages (Yapese, Ulithian, Woleaian, Chuukese, Pohnpeians, Kosraeans, Nukuoro, Kapingamarangi. English remains the official language of government and commerce. The cultural similarities are indicated by the importance of traditional extended family and clan systems found on each island.

In Kosrae State, the Congregational Church plays an extremely important role in everyday life while in Chuuk, clan relationships remain an important factor. Yap continues as the most traditional society in the FSM with a strong caste system. Over the last 15 years Pohnpei has rapidly developed as the most westernized state in the nation. This results in large part because the national government is in Pohnpei. At the same time, traditional leadership continues to play an important role.”

*Source: FSM Visitor’s Board (<http://www.visit-micronesia.fm/about/index.html>)*

Figure 7 provides the breakdown of the population by ethnic group, as of 2010.



<sup>23</sup> Environmental and Social Framework, Energy Sector Development in FSM, World Bank, 2014  
<http://documents.worldbank.org/curated/en/290931468300652291/pdf/E44960V10EAP0E00Box385164B00PUBLIC0.pdf>

Figure 7 Ethnic Composition (2010)<sup>24</sup>:

### Poverty Profile

The most recent data available on the population poverty levels is based on a Household Income and Expenditure Survey undertaken in 2013/14. According to the *Poverty Profile of the Federated States of Micronesia* report, published by the World Bank in 2017, one in 10 people in FSM live below the food poverty line, however more than 40% live below the national total poverty line (which is 80% higher than the international extreme poverty line, likely reflecting higher costs of living). FSM is reported to have the highest estimated rates of poverty among the nine small remote islands (PIC9) covered in the Regional Partnership Framework (RPF) for FY17 to FY21.5.

Key findings (extracted from the report) include:

- a. Low-income households mostly spend their resources on food, especially in Yap and Chuuk.
- b. There are some differences in expenditure patterns across states and welfare level.
- c. Household size is correlated with poverty. Poverty rates are higher in households with more children.
- d. Female-headed households are poorer than male-headed households in all states.
- e. Poverty is closely related with education levels.
- f. Poverty rate among workers in the public sector is lower than among workers elsewhere.
- g. The pattern of inequality is quite similar across states.
- h. Poverty incidence is higher and more severe in Pohnpei and Chuuk than in Yap and Kosrae.
- i. In terms of actual numbers, the majority of the poor live in Chuuk and Pohnpei.
- j. Chuuk contains nearly half of all the poor in FSM, and the two states of Chuuk and Pohnpei account for around 86% of the total population below the total poverty line. By itself, Chuuk accounts for 79% of the nation’s extreme poor that live below the food poverty line. By contrast, only about 3% of the country’s poor live in Kosrae.

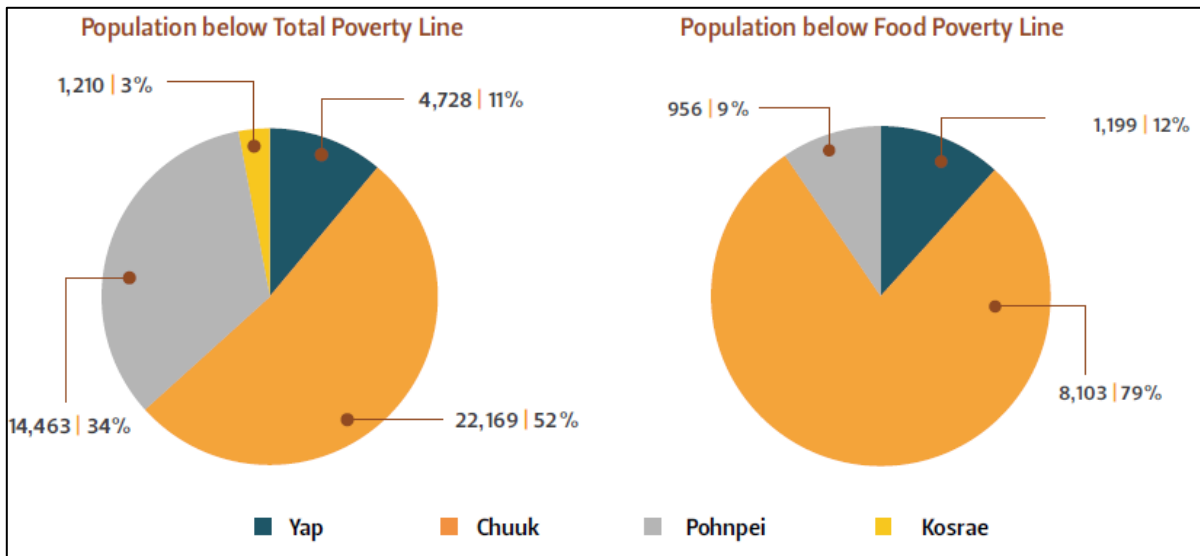


Figure 8 Distribution of Poor Population (Source: Poverty Profile of the Federated States of Micronesia based on 2013/14 HIES data)

Life expectancy is 68 years for men and 70 years for women. Other aspects of multi-dimensional poverty are as outlined below.

<sup>24</sup> <https://www.britannica.com/place/Micronesia-republic-Pacific-Ocean>

#### Multidimensional Aspects of Poverty

"Significant achievement is seen in dimensions such as access to electricity, improvement in sanitation, quality of housing, and access to education. Between 2005 and 2013, the proportion of households with no access to electricity fell by 15.5 percentage points, from 31.9% in 2005 to 23.6% in 2013. Likewise, there was considerable reduction in the proportion of households living in dwellings without sanitary facilities: from 45.9% in 2005 to 20.8% in 2013. Another area of significant improvement was in school enrolment of children: the percentage of households with a school-age child not attending school fell from 12.6% to 2.4%.

But there are other areas where improvements are not as significant. Households with no access to improved water source declined only by 3.5 percentage points, and the proportion of households with few assets remained almost unchanged. Progress also varies across states for some indicators. In Yap, 42.4% of the households lack sanitary facilities in their dwellings, higher even than in Chuuk which has a higher poverty rate. Further, the proportion of households that live in dwellings not made from solid materials is also higher in Yap than in the other states.

On the other hand, dwelling quality, including access to electricity, is much better in Kosrae and Pohnpei than elsewhere. While the proportion of households without access to electricity has declined significantly between 2005 and 2013 in Chuuk, more than one-third of households there still lack access to electricity. Enrolment at the primary school stage is generally high in FSM education almost universal except in Chuuk and Pohnpei."

*Definitions:*

*-No electricity: Household has no access to electricity (public grid or generators)*

*-Poor quality housing: Household lives in dwelling where building materials (roof, walls, floor) are not solid (concrete, metal or wood)*

*Source: Poverty Profile of the Federated States of Micronesia based on 2013/14 HIES data (World Bank, 2017)*

## Land

The land tenure systems of FSM face a unique set of challenges in terms of evolving practices and dynamic interaction between modern and traditional land tenure systems that differ in each state. The role of traditional extended family and clan systems have with respect to land is a common feature across all of FSM<sup>25</sup>.

Land was generally plentiful in pre-colonial times, and the local population declined dramatically due to post-contact epidemics. As the population continues to grow at a rate the government considers too high, ownership, use, control and inheritance of particular plots and finite resources may be locally sensitive<sup>26</sup>.

The overall population density was 154 per sq. km in 2005 (400 per sq. mi). The majority of the population lives in the coastal areas of the high islands, leaving the mountainous interiors largely uninhabited. The UN estimated that 22% of the population lived in urban areas in 2005, and that urban areas were growing at an annual rate of 2.17%.

Another unique feature of FSM relates to traditional land ownership and internal and external migration. Rights to land are often retained by family or clan members who have departed long term, as they may return (such as for retirement) to their island of origin. This diaspora of multiple landowners, often without formally documented titles, can introduce delays to getting permission for land use. Legislation relating to non-resident landowners is under review in Kosrae.

In some states, such as Chuuk, “tidal land” is owned separately to other land. The tidal land in Chuuk state is defined as from the high tide mark on the beach up to either the end of the reef or the depth of a Chuukese woman’s chest (the depth women wade to for their traditional fishing method).

In all states, land cannot be sold to non-citizens of FSM. Some States have made a concerted effort to have land titles registered, and to declare unregistered land as Government land. Custom mechanisms for ascertaining land rights have played an important part in this process. In Kosrae and Pohnpei, land is both privately and State owned, while aquatic areas are managed by the State as public trusts. Particular differences in each state include:

- a. **Chuuk** - Customary land tenure systems are still a strong influence on the majority of land in Chuuk, although Western land registration procedures and land tenure practices are increasingly becoming recognized. Customary rights of ownership, use, inheritance and transfer are still followed in many of the outer-island communities. Disputes over title determinations and land registration seriously complicate the efficient application of western land tenure practices<sup>27</sup>. The majority of land in Chuuk is privately or commonly family-owned lands. The State Government has limited land to locate public infrastructure. This has resulted to continuous challenge of acquiring land for public infrastructure such as power, water and airport, and there is particular resistance to projects where land is dug up (e.g. buying services such as water or power). In all States, land cannot be sold to non-citizens of the FSM<sup>28</sup>. Most land and aquatic areas are privately owned and acquired through inheritance, gift or, recently, by purchase.
- b. **Kosrae** - Traditional customary land ownership in Kosrae was modified by the Church in 1800s. While land is still owned by family members, the original traditions have been substantially changed<sup>29</sup>. Kosrae’s relatively small population means that almost everyone knows everyone, and there is a level of homogeneity of history, language, custom and traditions. This has” tended to make the Kosrae land tenure system less rigid, with less rules and regulations, and less difficulties of ownership conflict and dispute settlement<sup>30</sup>.
- c. **Pohnpei** - The sale of property is forbidden by law without legislative approval. However, “giving without condition”, called *pengsahp*, is permitted as a land transfer mechanism. The legal validity of these transfers remains in question. Pohnpei has the most developed legal system for administering land, and approximately 60% of the total land area of Pohnpei has been declared as “public lands”<sup>31</sup>. The Constitution of Pohnpei limits ownership of land to citizens. However, non-citizen individuals and businesses can obtain land on the basis of long-term leases<sup>32</sup>.
- d. **Yap** - Over 99% of all land and aquatic areas are privately owned. As of 2004, private lands on Yap had mostly not been mapped, surveyed or registered, however the Department of Land indicated that they now hold land title records for some proportion of

<sup>25</sup> *Private Lands Conservation in the Federated States of Micronesia*, Kevin Doran, University of Colorado Law School, 2004

[https://scholar.law.colorado.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1166&context=books\\_reports\\_studies](https://scholar.law.colorado.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1166&context=books_reports_studies)

<sup>26</sup> <https://www.encyclopedia.com/places/australia-and-oceania/pacific-islands-political-geography/micronesia>

<sup>27</sup> *Private Lands Conservation in the Federated States of Micronesia*, Kevin Doran, University of Colorado Law School, 2004

<sup>28</sup> Environmental and Social Framework, FSM Maritime Investment Project, World Bank, 2018

<sup>29</sup> Environmental and Social Framework, FSM Maritime Investment Project, World Bank, 2018

<sup>30</sup> *Private Lands Conservation in the Federated States of Micronesia*, Kevin Doran, University of Colorado Law School, 2004

<sup>31</sup> *Private Lands Conservation in the Federated States of Micronesia*, Kevin Doran, University of Colorado Law School, 2004

<sup>32</sup> *Private Lands Conservation in the Federated States of Micronesia*, Kevin Doran, University of Colorado Law School, 2004

land. Land use, transfer and ownership rights are still strongly influenced by traditional authority, although this is diminishing as cadastral surveys, mapping, public registration and issuance of titles are increasingly recognized as providing greater security of ownership “and of facilitating a rational and fair succession and inheritance of family land.”<sup>33</sup>

## Economic and Livelihoods

### Livelihoods and Economic Participation

“Overall, 78% of the population is rural, and subsistence farming and fishing are still the main means of livelihood. Almost half the women and two thirds of the men of economically active age participate in the labor force. One third of working men, and more than half working women (56%) are in unpaid occupations. The 2010 unemployment rate for men is 15.5%, and 17% for women.”<sup>1</sup>

While most households engage in agricultural production and fishing (94.6% and 70.7% respectively in 2010), only around 1% produces exclusively for sale. Around 10% sells some of their production. Of those aged 15 or more with cash income in 2000, 43% received wages or salaries, 21% had income from their own business, 41% received remittance income and 7% received social security or other income from Government.

Public administration, education, health, social work and utilities supply accounted for just over half of paid jobs. The only other significant sector was wholesale and retail repair and supply of vehicles and household goods, which employed 13% of the work force.

Average household income in 2005 was \$13,421. Female headed households earned over \$2,000 less than the average, while foreigners (non-FSM residents) earned almost \$7,000 more than the average. These figures include cash and non-cash income, so are not necessarily a good indication of purchasing power for cash goods.”

Source: *Environmental and Social Framework, FSM Maritime Investment Project, World Bank, 2018*

## Cultural Heritage

The project is not expected to have any impacts on cultural heritage sites, given it is planned to follow existing roadways and existing service connections to any premises connected.

There is the potential for graves across the four islands. No current survey exists of the location of graves outside defined cemeteries.

Particular sites of cultural note include:

- a. Chuuk has protected their underwater heritage through UNESCO, based on the value of their WWII shipwrecks and related underwater sites. There are underwater wrecks and relics elsewhere in Micronesia, but Chuuk lagoon has a significant number that represent a significant economic asset to the region and were included despite being under 100 years old due to their significance<sup>34</sup>.
- b. Pohnpei has an extant ancient city, Nan Madol, which was built on top of a coral reef in a lagoon, surrounded by water on three sides with a stone wall enclosing the complex. It was a major political and spiritual hub during the Saudeleur dynasty between 1200 to 1700, the first known example of centralized political power in the Western Pacific. The complex was a royal enclave, fortress, urban marketplace, high seat of government and religious center. It was also home to around one thousand people, including the nobility who were isolated from the general population and commoners who served them<sup>35</sup>.
- c. Yap has multiple relics of a vanished civilization, including sites of ancient cultivation, solid roads paved with stone blocks, ancient stone platforms and graves, and traditional council lodges with high gables and carved pillars, as well as embankments and terraces. Yap also has a number of traditional ‘banks’ for stone money, which was quarried in Palau in the form of large, round limestone disks with a central hole for transportation<sup>36</sup>.
- d. Kosrae also has an extant ancient city, Leluh, which include access canals for boats, royal tombs, sacred spaces, houses and areas for traditional food preparation (e.g. grinding stones). The remains are from a civilization that peaked around the 14th and 15th centuries, as a kingdom similar to Tonga or Hawaii. The King and aristocracy lived in the

<sup>33</sup> *Private Lands Conservation in the Federated States of Micronesia*, Kevin Doran, University of Colorado Law School, 2004

<sup>34</sup> <http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/dynamic-content-single-view/news/federate-states-of-micronesia-first-pacific-ocean-nation-to/>

<sup>35</sup> <https://www.globalsecurity.org/military/world/oceania/fsm-history.htm>

<sup>36</sup> <https://www.globalsecurity.org/military/world/oceania/fsm-history.htm>

center behind high walls of basalt (similar to those of Nan Madol). To the west, the lower aristocracy lived in modest houses of coral, and the rest of the population in simple huts<sup>37</sup>

## Gender

A separate gender specialist is being engaged by the World Bank to evaluate gender on this project. The report prepared by this separate assessment have been incorporated into this document in Annexure Four - Gender Assessment.

As poor households are more likely to be female-headed, it will be important to ensure that pricing for internet access is structured for low income households, including female-headed households, to avoid exacerbating inequality by introducing a 'digital divide' along the lines of gender or other dimensions of disadvantage.

### Division of Labor by Gender

"Among those who participate in the subsistence economy, gender is a major organizing principle in the division of labor. Women are the primary child-care providers and gardeners. They are responsible for many domestic chores including meal preparation and laundry. Women also harvest subsistence produce, weave mats, tend livestock, glean shellfish, and fish inshore. Men are the primary builders and carpenters. They do much of the heavy labor associated with subsistence horticulture and conduct the more dangerous fishing activities beyond the reef. High status positions in religious and traditional political hierarchies are primarily held by men, although women's church organizations provide a separate system of ranking among the women in some societies.

Participation in the market economy has blurred the strict demarcation of gender roles associated with subsistence production. Across the FSM, 52 percent of females 15 years of age and older participate in the cash economy compared to 66 percent of males. Men still hold the higher status jobs in government, but the increasing frequency of female employment in the labor force often requires men to perform domestic tasks traditionally performed by women."

### The Relative Status of Women and Men

"With the exception of Yap and a few coral atoll societies in Pohnpei, Micronesian societies emphasize matrilineal descent. Women, therefore, are the channels through which identity, titles, land rights, and property are acquired. This provides women with a level of status that is not found in more patriarchal societies, allowing women to exercise considerable influence over the conduct of domestic affairs, and even the allocation of use rights to land. Men typically control the political and economic affairs in the public sphere and have ultimate authority over domestic decisions, but the complementarity of tasks provides males and females with valued roles in society. The shift towards a market-oriented economy, however, has unsettled traditional gender relations. In many societies, the patrilineal emphasis of Western cultures is eroding matrilineal inheritance practices, while greater female participation in the cash economy is challenging male roles and diminishing the complementarity of tasks performed by males and females."

Source: <https://www.everyculture.com/Ma-Ni/Federated-States-of-Micronesia.html>

## Gender Based Violence

The Gender assessment indicated that young women in FSM are acutely vulnerable to Gender Based Violence (GBV), with one in three women (32.8 per cent) experiencing physical and/or sexual violence by a partner<sup>38</sup>. Furthermore, 8 per cent of women have experienced sexual abuse by someone other than a partner<sup>39</sup>. The consequences of this violence are significant, particularly for women's physical and mental health outcomes, the wellbeing and welfare of children, and women's ability to disclose or discuss instances of violence. This constrains women's ability to negotiate a life free of coercion as well as restricting women's freedom of movement throughout the community, access to health and education services and ability to participate in the workforce. The normalization of violence has consequences for women's trafficking risk with FSM a source of, and destination for, human trafficking and commercial sexual exploitation. Women and girls represent the greater share of victims of human trafficking for commercial sexual exploitation and are therefore considered a particularly vulnerable group.

<sup>37</sup> [https://en.wikipedia.org/wiki/Leluh\\_archaeological\\_site](https://en.wikipedia.org/wiki/Leluh_archaeological_site)

<sup>38</sup> FSM Department of Health and Social Affairs (2014), Federated States of Micronesia Family Health and Safety Study: A prevalence study on violence against women.

<sup>39</sup> Ibid.



## Social Organization

Urban population in 2010 accounted for only 22% of the total in the FSM. Community and especially family are critical to social organization and identity. Especially on the high islands, society is stratified by descent group affiliation, title, age and land relationships, which are the traditional basis of wealth and the conspicuous generosity that is the mark of a leader. However, disease and depopulation in the colonial period eroded the powerbase of traditional leaders, which depended on a large labor-force to work lands. The coral atolls are generally more egalitarian, and place more emphasis on specialized knowledge and achievement, though age and gender are still important social markers. Churches are now focal points of community interaction, though especially in Yap, men's houses that were formerly the centers of village power are maintained as meeting places and uphold traditional arts and culture.

## Households and Housing Characteristics

Most households comprise nuclear or extended families, with around one quarter providing a home for a parent or another relative. In 2000, average household size was 6.7, with a tendency to smaller households on Yap and larger in Chuuk. Female headed households accounted overall for 18% of the total, though 27% in Yap. Most homes in 2000 were single detached dwelling units. A further 9% of dwellings had an attached unit; only 2% were located in apartment blocks. Half had piped water and electricity, but only a quarter had any form of sanitary waste disposal, except in Kosrae, where over 70% enjoyed this facility. By 2010, four out of five had an improved drinking water supply, and three out of five an improved toilet facility, and household size had dropped to 6.1, an indication of the trend to depopulation.

## Education

Literacy levels in FSM are generally high. Over 95% of those 15-24 or older are literate, with women's rates at 96% slightly higher than men at 94.2% in 2000. Overall, girls have higher participation rates than boys at both elementary and high school levels, though Yap, the most traditional State, features lower high school enrolment rates for girls than boys. In 2000, 11.7% of persons over 25 were college graduates. This rose to 11.8% in 2010. 91. Due to the multiplicity of indigenous languages and dialects, which though related, are not always easily mutually intelligible, English has been adopted as the sole official language, and is the medium of instruction in high schools and tertiary institutions. Good English language ability is an advantage in the employment market. In 2010, 75.9% over the age of five were literate in English, with higher levels amongst the young and those of economically active age.

## Annexure Four – Gender Assessment

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*This assessment was prepared by a Gender Specialist engaged for the Digital FSM Project.*

The purpose of this assessment is to elaborate on gender considerations in the PAD by (i) identifying gaps between the experiences and status of women and men relevant to the above project; (ii) identify activities to address these gaps; and (iii) suggest suitable indicators to track progress.

This assessment is based on information from:

- Desk-based document review including gender literature, regional policy and guidance notes and international best practice standards.
- Stakeholder and community consultations and focus groups discussions conducted in September 2019, including with representatives of national and state government, women's organizations and community members.

### Context

Attitudes towards gender and the cultural stereotyping of 'traditional' gender roles hinders progress towards gender equality in FSM. While all states in FSM, with the exception of Yap, have traditionally emphasized matrilineal rights, women's ability to own land and access resources have been significantly impacted by the country's history of colonial rule relegating decision making in relation to land and resources to male family members. Matrilineal descent does not guarantee women a voice or presence in decision-making processes, particularly about land and resources. While inheritance may pass through matrilineal lines, control over resources is often vested with male family members. In addition to these traditional practices and ongoing influence of colonial history, the church plays a strong role in FSM, further constraining women's opportunities for voice and decision-making particularly when it comes to negotiating sexual behaviour.

With limited sexual agency and high dependency on families, young women in FSM are acutely vulnerable to GBV and coercion/trafficking. Rates of GBV are high, with one in three women (32.8 per cent) experiencing physical and/or sexual violence by a partner<sup>40</sup>. Furthermore, 8 per cent of women have experience sexual abuse by someone other than a partner<sup>41</sup>. The consequences of this violence are significant, particularly for women's physical and mental health outcomes, the wellbeing and welfare of children, and women's ability to disclose or discuss instances of violence. This serves to exacerbate gender inequality and constrains women's ability to negotiate a life free of coercion as well as restricting women's freedom of movement throughout the community, access to health and education services and ability to participate in the workforce. Furthermore, the normalization of violence has consequences for women's trafficking risk with FSM a source of, and destination for, human trafficking and commercial sexual exploitation. Women and girls represent the greater share of victims of human trafficking for commercial sexual exploitation and are therefore considered a particularly vulnerable group.

Women and girls also experience inequality in regard to educational opportunity. While 2009 statistics indicate gender near gender parity<sup>42</sup> in educational enrolment, there are gendered challenges associated with the retention of female students and their continued pathways into further education, as women and girls are often encouraged to assume the burden of household responsibilities in place of educational or employment opportunities. Men and boys continue to dominate women in higher education enrolments in field such as agriculture, computer information systems and marine sciences which remain highly stereotyped according to socio-cultural expectations of gender roles<sup>43</sup>. This pattern is replicated across employment as well, with a lack of women in technical and professional positions throughout FSM. The labor force participation rate for women in FSM was only 50.1 per cent as of 2000, compared with 67.2 per cent for men. The number of female wage and salary earners was less than half that of males – and women comprise only 14 percent of the non-agricultural sector.<sup>44</sup> Not only are women less represented in the paid workforce, they are concentrated at the lower

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<sup>40</sup> FSM Department of Health and Social Affairs (2014), Federated States of Micronesia Family Health and Safety Study: A prevalence study on violence against women.

<sup>41</sup> Ibid.

<sup>42</sup> Ratio of girls to boys of 1:0.96 (primary) and 1:1.02 (secondary) according to FSM Office of Statistics (2010) Millennium Development Goals: The Federated States of Micronesia.

<sup>43</sup> According to data from the College of Micronesia 2008 Statistical Yearbook, as presented in SPC (2012), Stocktake of Gender Mainstreaming Capacity of Pacific Island Governments: Federated States of Micronesia. These statistics indicate that there were no women/girls enrolled in agriculture, 200 boys to 135 girls enrolled in computer information systems, and 60 boys to 14 girls in marine sciences.

<sup>44</sup> Ibid.

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levels of the hierarchy, with comparatively lower pay. Participation of women at the highest levels of decision making remains very limited, and women continue to be highly under-represented at the legislative and executive levels of government. FSM is one of only three countries worldwide that has zero women in parliament.<sup>45</sup> Leadership at national, state and municipal levels is strongly attached to traditional forms of local leadership, across which women are not highly represented with further limits their participation in broader leadership and decision-making processes. Furthermore, legal protections for women vary greatly from state to state including inconsistencies across the four states when it comes to age of consent, grounds for divorce, child custody disputes and discrimination more broadly. A review of FSM's legislative provisions conducted in 2010 after the ratification of CEDAW, identified that FSM was only fully compliant on 27 per cent of the 113 internationally recognized indicators of legal compliance.<sup>46</sup>

These inequalities are compounded by high rates of maternal mortality alongside high fertility rates and rates of teenage pregnancy which highlight constraints associated with access family planning and reproductive health services. In 2006 FSM was labelled as a 'high maternal mortality country' by UN agencies after a significant spike in the maternal mortality rate in the country between 2002-2006<sup>47</sup>. While there was a decline in maternal mortality incidences for the period 2008-2009, the full picture of maternal mortality is somewhat unclear as rates are developed based primarily on reported deaths that occur in health facilities, meaning that many deaths occurring in the community may not be reported, or not clearly related to pregnancy or delivery complications. FSM's fertility rate, while gradually declining, remains high by world standards, and high instances of teenage pregnancy are evidenced by a birth rate of 42.5 births per 10000 women aged 15-19 years of age<sup>48</sup>. Women in FSM are also more greatly affected by the increasing prevalence of non-communicable diseases, both directly as victims of disease themselves, and indirectly as caregivers of relatives who are impacted by disease. These challenges are particularly pronounced for women residing in the outer islands whose access to confidential and gender-sensitive health services is extremely limited. Qualitative data from stakeholder and community consultations in 2019 identified ongoing concerns around the use of publicly accessible radio frequencies to communicate confidential health information to dispensaries in the outer islands and persistent barriers for women to achieve sexual and reproductive health rights.

<b>Education</b>	Ratio of girls to boys in primary education	1:0.96
	Ration of girls to boys in secondary education	1:1.02
<b>Employment</b>	Labour force participation rate (women)	50.1%
	Labour force participation rate (men)	67.2%
	Number of wage earners	4,514 (women) 9,286 (men)
<b>Leadership &amp; Decision-Making</b>	There has never been a woman elected to FSM National Congress.	
<b>GBV</b>	Rate of women who have experience physical/sexual violence by a partner over the course of their lifetime.	32.8%
<b>Health</b>	Maternal Mortality Rate	206
	Fertility Rate	2.68
	Birth rate for women aged 15-19 (teenage pregnancy)	42.5 births per 1000 women

Table 18 - Snapshot of gender inequality in FSM<sup>49</sup>

<sup>45</sup> <http://archive.ipu.org/WMN-e/classif.htm>. Situation as of January 1, 2019.

<sup>46</sup> SPC (2012), Stocktake of Gender Mainstreaming Capacity of Pacific Island Governments: Federated States of Micronesia.

<sup>47</sup> FSM Office of Statistics (2010) Millennium Development Goals: The Federated States of Micronesia.

<sup>48</sup> Ibid.

<sup>49</sup> FSM Office of Statistics (2010) Census of Population and Housing; SPC (2012), Stocktake of Gender Mainstreaming Capacity of Pacific Island Governments: Federated States of Micronesia; FSM Department of Health and Social Affairs (2014), Federated States of Micronesia Family Health and Safety Study: A prevalence study on violence against women.

## Priority Areas for Digital FSM Project

Affordable, high-speed internet is known to be associated with socio-economic empowerment by increasing users' access to services, including education, employment and health. As such, access to ICTs can be particularly beneficial to marginalised and vulnerable populations to help improve their voice in decision making processes, engagement with government services and inclusion within the digital economy. For women in particular, this represents an important opportunity to address existing barriers, as outlined above. However, analysis shows that while the Government has been engaging on gender issues, including across the ICT sector, there is poor coordination across a national and state government level and weak integration of gender informed policies and programming across a 'whole of government' approach in accordance with gender mainstreaming obligations. This represents a risk for the potential benefits of increased availability and use of ICT services to not be equally shared among men and women, particularly if new policies are developed without adequate consultation and engagement in this space. Women are significantly underrepresented in governance and leadership positions in FSM, which poses specific risks that increases in digital opportunities may be shared unequally— further diminishing women's voice and influence in society.

### Priority Area 1: Rates of internet access & use, tracking trends and inequalities

- **Analysis:** Women and men access the internet and use digital services at similar rates. Globally women are far less connected digitally and this gender gap is growing—the global Internet user gender gap grew from 11% in 2013 to 12% in 2016, according to data from the International Telecommunication Union. The gender gap is even larger in the world's Least Developed Countries (LDCs) at 31%. However, there is no evidence of a current gender gap in FSM for access to the internet or digital services. While sex-disaggregated data is unavailable for mobile phone and internet subscriptions, 2019 data on the advertising audience for social media platforms in FSM indicates a relatively equal distribution of accounts between men and women<sup>50</sup> which offers a strong insight into the gendered nature of ICT uptake more broadly. Furthermore, extensive stakeholder and community consultations carried out in the four states through 2019, including surveys of women's groups and school children, identified equal uptake of ICTs among women and men. While available evidence suggests that the increased availability of ICT services are equally shared by men and women, persistent inequalities in terms of labor force participation, violence against women and girls, health and education, and participation in leadership and decision-making mean there is a continued risk of these inequalities impacting women's ability not only to access ICTs but to take full advantage of the socio-economic impacts associated with this. Furthermore, the absence of sex disaggregated telecommunications data presents a significant risk for efforts to monitor these levels of uptake, track any changes in this trend and identify any gap should it start to emerge. There is concern in FSM to put in place policies to help ensure that the digital transformation offers opportunities and benefits to men and women equitably—and also that any adverse impacts are mitigated effectively.
- **Action:** The Project is expected to respond to these concerns through Component 3(d) and the provision of support to the Gender Development Office of the National Government. The Project will support this office to support to lead and support M&E work on gender issues throughout the program including the provision of support and guidance to the TRA/OAE/FSMTC to ensure collection of sex-disaggregated statistics around telecommunications subscriptions, access and use.
- **M&E:** The Project includes mechanisms to monitor gender impact and facilitate sex disaggregated analysis. Of relevance to this priority area are the following indicators: (i) presence of collection of sex disaggregated telecommunications statistics (Y/N), (ii) ratio of women to men telecommunication subscribers/users (baseline assumption to be maintained at 50:50 ratio).

### Priority Area 2: Harmful digital communication and cyber safety risks for women

- **Analysis:** Women experience the internet differently to men. International studies have found that women are more concerned about privacy risks online than men and are more likely to keep their profiles private and delete unwanted contacts. Women also represent the vast majority of victims of stalking and cyberstalking, are far more likely to be sexually harassed online and more likely to describe these interactions as extremely upsetting. Stakeholder and community consultations and focus group discussions, as part of the September 2019 mission, highlighted a demonstrable gap with regard to how men and women are using the internet and their sense of risk and safety online. In particular, these qualitative consultations found high rates of community concerns regarding the digital circulation of sexually degrading images and videos, often circulated without consent

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<sup>50</sup> Women comprise a slightly greater proportion of the advertising audience on Facebook at 55% of the population. While data is available for other social media platforms, the limited number of users renders them less representative than the Facebook sample <https://datareportal.com/reports/digital-2019-federated-states-of-micronesia?rq=Micronesia>

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and including girls below the age of consent, including a number of examples of the circulation of 'revenge pornography' online. Furthermore, anecdotal discussions of these events highlighted the enduring shame and stigma that these instances had on women and girls when compared with their male counterparts. FSM is a predominantly Christian country with traditional socio-cultural norms discouraging open discussion of sexual behavior or physical displays of affection and also constraining women's ability to negotiate sexual practices free of coercion. Stereotypical understandings of gender roles mean that women and girls, in particular, endure the weight of strong community expectations and scrutiny on their sexual and relationships behavior for fear of the shame and social stigma associated with perceptions of promiscuity. Currently there is no legislation or policy framework on cyber safety or harmful digital communications in FSM<sup>51</sup>. This results in: (i) a knowledge gap on safe digital behavior, (ii) the inability to view these harmful digital practices as 'criminal' or 'illegal', and (iii) a lack of knowledge about avenues for reporting complaints or seeking redress.

- Action: The Project is expected to reduce gender disparities through specific actions to address the distinct needs of females in the Project's activities, namely subcomponents 3a (legal and regulatory framework for digital government), 3b (creation and roll out of a government cybersecurity program) and 3d (strengthening of the gender division in the national government). In doing so, the project will support the development of a cybersecurity policy framework, including through support to the gender division of national government to contribute to these policy developments and ensure gender-sensitivity. As part of this action, the Project will also facilitate legislative reform criminalising harmful digital communications, alongside targeted awareness activities to bridge knowledge gaps at a community level.
- M&E: The Project includes mechanisms to monitor gender impact and facilitate sex-disaggregated analysis. Of relevance to this gap are the following indicators: (i) Development of cyber security policy framework (Y/N) (ii) Passage of bill legislating against harmful digital communication (Y/N) (iii) Number of public awareness sessions held (target 4 = Yap, Chuuk, Pohnpei & Kosrae).

### Priority Area 3: Inclusive digital services, improving women's access to government services

- Analysis: Digital connectivity services are essential to improve outcomes for citizens in FSM, particularly those residing on outer islands, who have limited access to education, markets and health services. Access to basic services is also generally higher in Pohnpei than other states. Women, in particular, face constraints in their ability to access and engage with government services. The persistent threat of GBV, discussed above, means that many women live under the threat of violence and this restricts their ability to move freely in the community, to use public transport, to access health and education services, and to travel to market or to the workplace. Focusing on women's access to health services, as an example, women in FSM face a number of inequalities in regard to sexual and reproductive health, including complications during pregnancy, the ability to negotiate safe sex, teenage pregnancy and access to family planning. For women living in remote areas and on outer islands, these challenges are exacerbated due to the nature of basic service provision through dispensaries staffed by health assistants. The nature of these services is limited by the skill level of providers, and the ability for these services to be supplemented, ad hoc, by visiting medical teams from the main islands. Access to reproductive health services in these contexts are particularly challenging, with many dispensaries staffed by male health assistants, who are often a relative of the women seeking services (or a relative of her husband)<sup>52</sup>. In these situations, both health assistants and women seeking services are constrained by traditional customary barriers when it comes to openly discussing sexual and reproductive health concerns with male relatives. This is supported by stakeholder and community consultations carried out in 2019, during which a number of participants recounted frequent situations in which a woman had presented to a dispensary with a sexual or reproductive health concern but, upon seeing a male relative in attendance had instead informed them that 'she had a headache' rather than divulging sensitive information. Women's ability to seek alternate health consultations in these situations are significantly constrained by technological limitations which constrain opportunities for remote (or eHealth) consultations with female health attendants from outside the community. These telecommunication limitations mean that when information needs to be communicated from an outer island dispensary to the health department or hospital in the main island, this information is currently being communicated by publicly accessible HCF radio frequencies the communication of health and patient information. This raises serious concerns for the communication of confidential health information, particularly in situations where women are already constrained in discussing their sexual and reproductive health concerns. Furthermore, women's continuity of primary care is compromised by the duplication or absence of health records, particularly in contexts where women have relocated to main islands or moved between dispensary areas. Qualitative data from 2019 stakeholder consultations indicated a number of challenges including: (i) challenges registering births outside hospital settings resulting in the lack of a hospital number for that person and absence of a health record, (ii) hard copy record storage processes that are tied to physical clinic location and rarely travel with patients as they transition between service locations, and (iii) minor changes or misunderstandings in name spelling resulting in duplications of patient records. There have

<sup>51</sup> The lack of formal legislative or regulatory framework means that there is no avenue for individuals to lodge complaints of harmful digital practices, or database by which to formally track the number of instances. This results in a complete absence of quantitative data by which to assess this gap, hence the reliance on qualitative and anecdotal data in this instance.

<sup>52</sup> FSM Office of Statistics (2010) Millennium Development Goals: The Federated States of Micronesia.

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been limited investments to date in either digital health services, or electronic health records. The FSM Department of Health has commenced electronic health records in major hospitals but have faced significant challenges associated with unique identification processes, reliant on patient hospital numbers that are allocated upon registration of a birth and not utilized for any other identification purposes. Similarly, lack of technological capacity and infrastructure outside these major hospital settings, limits the ability for electronic health records, in their current form to be utilized at a dispensary level. Furthermore, attempts by organizations such as WHO to pilot biometric health registration processes at a village level have been hampered due to poor internet connectivity which limits the ability for this data to be shared and centralized. Anecdotal discussions as part of our 2019 stakeholder consultations highlighted instances in which some of this health data had been lost on laptops that were dropped in the ocean, as staff were still reliant on physically being in the same location to manually centralize data across a number of devices into a centralized database.

- Action: The Project is expected to respond to these concerns through a range of components including component 2(e) to finance a national ID system and, in doing so, increase ability of health services to develop unique identifiers for patients and the ability to standardize health records across multiple locations. Similarly, component 2(e) will finance the development of digital services, and in doing so, facilitate on the development of e-services in key sectors such as health. Financing inclusive services, such as health, will help to reduce women's existing barriers to accessing government services, particularly limitations associated with sexual and reproductive health services. The gender-focus of this work will be further reinforced through component 3(d) which will support the Gender Development Office of the National Government to ensure that policies and practices around digital services are gender-informed, responding to identified gender gaps, and monitoring progress towards these objectives.
- M&E: The Project includes mechanisms to monitor gender impact and facilitate sex-disaggregated analysis. Of relevance to this gap are the following indicators: (i) Expanded access to internet services on outer islands (percentage increase of outer islands with internet access), (ii) digital services implemented by government, (iii) digital services design and implementation informed by assessment of gender impacts.

## Annexure Five - Land Use – Access Agreement

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To be finalised as a separate report prior to project effectiveness and will ensure direct linkages to the Implementing Agency due diligence processes.

## Annexure Six - Erosion, Drainage and Sediment Control Management Plan and Contaminated Soil Disposal Management Plan Outline

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### Project Description

- a. Provide a comprehensive description of the project; and
- b. Include an overview of the pre-construction, construction, and operational phases of the project.

### Purpose, Scope and Objective

The section should include:

- a. Scope of the Erosion, Drainage and Sediment Control Management Plan (EDSCP) and Contaminated Soil Disposal Management Plan (CSDMP);
- b. Establish objectives for general EDSCP and CSDMP;
- c. Establish specific objectives for site specific EDSCP and CSDMP; and
- d. Relationship to specific mitigation measures.

### Statutory and Regulatory Requirements

- a. Legislative requirements as prescribed in the Project Environmental and Social Management Framework (ESMP) and Environmental and Social Management Plan (ESMP).

### Potential Impacts

- a. Overview of impacts identified in ESMP.



Erosion and sediment control impacts and mitigations

Source of Impact	Potential Impact and Relevant Management Plan Objective	Mitigation and Management (Design Feature/ Specific Measure)	Mitigation Measure	Activity/ Monitoring	Frequency	Duration	Responsibility	Evidence

## Project Implementation (human resources, partners, and organizational responsibilities)

- a. Describe human resources for implementation of the plan and component programs/interventions;
- b. Clearly define roles and responsibilities and organizational structure;
- c. Discuss training that will be provided; and
- d. Describe potential partners (NGOs, government, etc.) and their respective roles and responsibilities.

## Resources

- a. Equipment requirements including erosion and sediment control devices (sediment fencing, silt curtains, etc) water quality monitoring equipment; and on-site weather monitoring station;
- b. Staff involved including Safeguards Officer and Site Manager; and
- c. Registers including water quality monitoring record; and non-conformance register.

## Schedule

- a. Multi-year schedule of implementation for the component programs/ interventions and the overall plan.

## Monitoring and Evaluation

- a. Overall monitoring and evaluation framework that integrates the monitoring and evaluation requirements for the component programs/ interventions.

## Reporting and Notification

- a. Contractor's monthly report including results of the surveys and inspections; and number and results of verification inspections, including but not limited to landform stability inspections, sediment control structure and stockpile inspections and control measures implemented to manage failing sediment control structures and stockpiles.

## Budget

- a. Budgets for the component programs/ interventions and the total cost of the plan.

## Annexure Seven - Waste Code of Conduct

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These requirements will form the basis for the development of the Construction Waste Management Plan under Component 1. The requirements for the Code of Practice are:

1. Compliance with Government of FSM Solid Waste Management Regulations.
2. Satisfies the requirements of the ESMP.
3. Satisfies the requirements of the World Bank ESF and EHS Guidelines.
4. Meets the following minimum standards:
  - a. No FSM landfills are to be used for any hazardous waste. All hazardous waste is to be recycled or disposed of offshore at a permitted facility;
  - b. No dumping of any waste in FSM and no burial or disposal of waste on small islands;
  - c. Compliance with Waigani Convention and any other relevant international conventions for export of hazardous and non-hazardous waste; and
  - d. Identify and utilize suitable local recycling and reuse options.
5. Implements the usual good practice of solid waste management, including:
  - a. Segregation of waste;
  - b. Secure storage for waste;
  - c. Adopting the waste hierarchy: (i) avoid; (ii) reduce; (iii) reuse; (iv) recycle; and
  - d. Collaborating with other sectors, waste generators and government initiatives for cumulative benefits.

When developing, and implementing the Code of Practice, the Contractor will consider:

**Waste streams:** identify which waste streams are likely to be generated and estimate the approximate amounts of materials

- a. Undertake inventory of materials that can be reused, recycled or recovered from the project;
- b. Specific types of materials;
- c. Amount of material expected; and
- d. Possible contamination by hazardous materials: these materials will limit reuse/recycling options and require special disposal.

**Collection and Storage:** How and where will the different waste streams be collected and stored prior to their disposal. Detail the types of containers to be used and the storage areas that will be created for this waste. Differentiate between regular, bulk and hazardous waste. This must be compliant with the minimum standards detailed in the ESMP:

- a. Hazardous wastes shall be collected and stored in watertight containers, Containers shall be stored in a bunded and covered area prior to export for disposal;; and
- b. Non-hazardous wastes shall be stored in a way that prevents their uncontrolled movement, this may be containerized or fenced and/or covered stockpiles. Where appropriate, silt fences, drains and traps or other movement prevention mechanisms should be put in place.

**On-site:** understand how the waste management system (housekeeping, sorting and storage) will work on-site, including bin placement and access.

Determine storage requirements (separate bins or co-mingled), things to consider include:

- a. Ease of use: ensure that containers are easily accessible by workers and that storage areas are clearly sign posted;
- b. Safety: ensure that the containers and storage can be managed safely, including limiting public access to the storage areas;
- c. Hazardous waste materials storage;
- d. Aesthetics: ensure that sites and storage area appears orderly and will not raise concern from local residents or businesses – for example screening for dust and litter containment and daily collection of windblown material; and
- e. Establish a collection/delivery plan in collaboration with waste contractors for waste and recyclable materials generated on-site.

**Clearly assign and communicate responsibilities:** ensure those involved in the Digital FSM Project are aware of their responsibilities in relation to the Codes of Practice.

**Training:** be clear about how the various elements of the Waste Management Plan will be implemented.

**Monitor:** to ensure the plan is being implemented, monitor on-site as per the ESMP monitoring plan.

Waste and/or Recyclable Materials		Destination			
		Reuse and Recycling		Disposal	
Possible Materials Generated (add or delete as needed)	Estimated volume (m <sup>3</sup> ) or area (m <sup>2</sup> ) or weight (t)	On-site (how will materials be reused and/or recycled on-site)	Off-site (Specify the proposed destination and/or recycling facility)	Specify the disposal process and storage disposal	the site for and the off-island collection, and the eventual disposal
Wood waste					
Cardboard and paper					
Ferrous metals					
Non-ferrous metals					
Concrete					
Gravel					
Sand/soil					
Asphalt					
Green waste					
Asbestos					
Fluorescent light bulbs					
Glass					
Hydrocarbons					
Plastics					
PVC					
General waste (e.g. food waste, contaminated food packaging, non-recyclable plastics)					

## Annexure Eight - Chance Finds Procedure

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### Introduction

Cultural property includes monuments, structures, works of art, or sites of significance points of view, and are defined as sites and structures having archaeological, historical, architectural, or religious significance, and natural sites with cultural values. This includes cemeteries, graveyards and graves.

Screening for the Digital FSM Project indicated that Cultural Physical Resources were unlikely to be at risk as a result of the projects. Nonetheless, there is the possibility that unexpected cultural heritage items could be discovered during works – ‘Chance Finds.

### Chance Finds Procedure

This procedure is to be followed in the event of a Chance Find:

- a. Stop the construction activities in the area of the chance find;
- b. Delineate the discovered site or area;
- c. Secure the site to prevent any damage or loss of removable objects;
- d. Notify the Roll Out Manager and CIU who in turn will notify the responsible local authorities;
- e. Responsible local authorities and the Office of National Archives, Culture and Historic Preservation (NACH) through the Historic Preservation Office would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures;
- f. Decisions on how to handle the finding shall be taken by the responsible authorities and the Historic Preservation Office. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage;
- g. Implementation for the authority decision concerning the management of the finding shall be communicated in writing by the Historic Preservation Office; and
- h. Construction work could resume only after permission is given from the responsible local authorities and the Historic Preservation Office concerning safeguard of the heritage.

These procedures must be referred to as standard provisions in construction contracts.

### Reporting

During project supervision, the Roll Out Manager shall monitor the above regulations relating to the treatment of any chance find encountered are observed. Relevant findings will be recorded in reports to the World Bank.

## Annexure Nine - Standard Contract Clauses

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Generic contract clauses are provided in this annex to assist with environmental and social management works expected to have minor impacts. These mitigation measures are the core of an Environmental and Social Management Plan and the associated minor impacts typical of small works, which can be routinely addressed with best industry practice. These clauses are general and may be modified to conform to applicable national laws, contract procedures and actual scope and nature of the works anticipated. These clauses are intended to be included as requirements in the works contract and shall remain in force throughout the contract period. These clauses represent the minimum standard of execution for environmental protection and include:

- (1) Permits and Approvals
- (2) Site Security
- (3) Discovery of Antiquities
- (4) Worker Occupational Health and Safety
- (5) Noise Control
- (6) Use and Management of Hazardous Materials, fuels, solvents and petroleum products
- (7) Use and Management of Pesticides
- (8) Use of Preservatives and Paint Substances
- (9) Use of Explosives
- (10) Site Stabilization and Erosion Control
- (11) Air Quality
- (12) Traffic Management
- (13) Management of Standing Water
- (14) Management of Solid Wastes -trash and construction debris
- (15) Management of Liquid Wastes
- (16) Management of Works

### Environmental and Social Management Plan (ESMP)

The Contractor is required to implement this ESMP. The Contractor is responsible for the implementation of construction and rehabilitation activities for the sites and for implementing the impact mitigation measures in the construction phase. The Contractors approach shall be detailed in the Environmental and Social Management Plan.

The Contractor shall include a suitably qualified and experienced Environmental, Occupational Health and Safety Officer (and other staff or consultants as necessary) staff to be specifically responsible for preparation and regular update and supervision of the CESMP. The Environmental, Occupational Health and Safety Officer is responsible for the daily supervision and monitoring of the Contractors implementation of the Plan and compliance with the Project ESMP for the duration of the contract.

The CESMP shall be approved by the Employer prior to the Contractor's mobilization to the site.

The Contractor will be required to report on the implementation status of the CESMP to the Employer. The damages due to the violation of the stipulations by the Contractor shall be compensated and/or restored by the Contractor at his or her own expense. Performance will be monitored by the Employer and will be enforced by withholding of payments (refer to relevant clause in the bid documents).

### Principles

The CESMP should provide the following:

- a. The CESMP is informed and based upon the FSM law, the Digital FSM Project ESMP, and World Bank Group EHS Guidelines;
- b. All commitments must be specific and auditable with measurable outcomes and clear timeframes;
- c. Include occupational and community health and safety;
- d. To ensure readability, write clearly and avoid long sentences with complex clauses;
- e. Always use the terms 'will' and 'must', rather than 'should' or 'may' when committing to carry out management actions;

- f. Avoid use of ambiguous terminology such as 'where possible', 'as required', 'to the greatest extent possible'. If it is necessary to include ambiguous terminology, it should be explained, and examples given;
- g. Clearly explain any technical terms or acronyms used, and/or define them in a glossary; and
- h. Commitments or statements within the management plan must be consistent with other relevant management plans or conditions of approval.

## CESMP Content

### Declaration and Document Version Control

The CESMP should provide the following:

- a. Person accepting responsibility for the CESMP – signed declaration; and
- b. The document version control should be a simple system that ensures that details of all key changes to the document over time are properly recorded.

### Table of Contents

### Description of Works

The CESMP should provide a summary of the works, description of construction methodologies and identification of offsite areas such as source of materials, fumigation, laydown areas, workers accommodation, offshore waste disposal sites etc.

A schedule of intended commencement and completion dates should be provided. Projects undertaken in stages should identify each stage in the schedule.

Particular attention should be paid to the development of the construction methodology and how it will be staged to ensure continued access to sensitive receptors (e.g. schools, hospitals) during the construction phase.

### Policies and Objectives

The CESMP should include the company policies and environmental outcomes of the plan should be defined.

### Environmental Management Roles and Responsibilities

The CESMP should define the roles and responsibilities of personnel in charge of the environmental management of the works. The roles and responsibilities of each relevant position should be documented, including the responsibilities of any subcontractors. The names of the responsible personnel do not need to be included. Identification of the position titles, roles and responsibilities is sufficient. If the roles and responsibilities are expected to change over time the long-term variations should also be documented.

### Reporting

The CESMP should include a description of reporting requirements should include:

- a. A list of required reports including where appropriate monitoring, environmental incidents, non-compliance, corrective action and auditing;
- b. A description of the standard report content;
- c. The schedule or triggers for preparing a report;
- d. Who the report is provided to; and
- e. Document control procedures.

### Training

All people involved with the works should receive relevant environmental training to ensure they understand their responsibilities when implementing the CESMP. People to be trained include those at the site/s of all project activities and operations, including contractors, subcontractors and visitors. The training should be tailored to the role of the individual in the project.

The CESMP should describe the training to be implemented and could include:



- a. Site inductions;
- b. Identification of key points of environmental value and any relevant matters of national environmental significance;
- c. Understanding the requirements of the CESMP and the individual's role;
- d. Environmental incident emergency response procedures;
- e. Site environmental controls;
- f. Cultural inductions, GBV, HIV Aids and communicable diseases; and
- g. An outline of the potential consequences of not meeting their environmental responsibilities.

Records of all training conducted should be maintained and include:

- a. Person receiving the training;
- b. Date the training was received;
- c. Name of the person conducting the training; and
- d. A summary of the training.

### Emergency Contacts and Procedures

The CESMP should identify the key emergency contacts responsible for managing environmental emergencies associated with the project and their contact details. These personnel should have the power to stop and direct works so that they can manage emergencies effectively. In addition, the plan should establish procedures for managing environmental emergencies and ensure that those procedures are implemented and maintained.

The CESMP should also detail the Contractors contingency plan for extreme weather events, medical emergencies and other rapid response situations.

### Works Methodologies

The CESMP should clearly state the tools, strategies, mechanisms, construction methodologies etc. to meet the stipulations in the ESMP and this information usually forms the bulk of the content of the plan. For each potential activity or impact the plan should address specific measures that will be taken including:

- a. Detailed methodologies as required, including diagrams where necessary, levels of competency required, PPE and other details as related to the works and the stipulations of the ESMP;
- b. Additional mitigation measures to be implemented specifically in relation to identified offsite locations; and
- c. Supervision and monitoring procedures with trigger values for corrective actions

### Sub-plans

The CESMP should also include all required sub-plans (SWMP, TMP, etc) as an annex to the CESMP.

### CESMP Audits

The CESMP should include the schedule or triggers for auditing the implementation and effectiveness of the plan. It should address both internal and external audit requirements including who is responsible for undertaking the audits and reporting the results.

### CESMP Updates

The CESMP should specify the schedule or triggers for updates of the plan. An update is required whenever there is a change to the scope of the works or construction methodology that changes the projects area of impact or brings about a change that would be of public interest to know. The plan should also identify who will be responsible for undertaking the update.

## Standard Clauses

### **1. Permits and Approvals**

The contractor shall be responsible for ensuring that he or she has all relevant legal approvals and permits required to commence works.

### **2. Site Security**

The contractor shall be responsible for maintaining security over the construction site including the protection of stored materials and equipment. In the event of severe weather, the contractor shall secure the construction site and associated equipment in such a manner as to protect the site and adjacent areas from consequential damages. This includes the management of onsite, construction materials, construction and sanitary wastes, additional strengthening of erosion control and soil stabilization systems and other conditions resulting from contractor activities which may increase the potential for damages.

### **3. Discovery of Antiquities**

If, during the execution of the activities contained in this contract, any material is discovered onsite which may be considered of historical or cultural interest, such as evidence of prior settlements, native or historical activities, evidence of any existence on a site which may be of cultural significance, all work shall stop and the supervising contracting officer shall be notified immediately. The area in which the material was discovered shall be secured, cordoned off, marked, and the evidence preserved for examination by the local archaeological or cultural authority. No item believed to be an artefact must be removed or disturbed by any of the workers. Work may resume, without penalty of prejudice to the contractor upon permission from the contracting officer with any restrictions offered to protect the site.

### **4. Worker Occupational Health and Safety**

The contractor shall ensure that all workers operate within a safe environment. Sanitation facilities shall be provided for all site workers. All sanitary wastes generated as a result of project activities shall be managed in a manner approved by the contracting officer and the local authority responsible for public health. The contractor shall ensure that there are basic medical facilities on site and that there are staff trained in basic first aid. Workers must be provided with the necessary protective gear as per their specific tasks such as hard hats, overalls, gloves, goggles, boots, etc. The contractor shall provide the contracting officer with an occupational health and safety plan for approval prior to the commencement of site activities.

The contractor must ensure that all workers operate within a safe environment. All relevant Labor and Occupational Health and Safety regulations must be adhered to ensure worker safety. Sanitary facilities must be provided for all workers on site. Appropriate posting of information within the site must be done to inform workers of key rules and regulations to follow.

### **5. Noise Control**

The contractor shall control noise emissions generated as a result of contracting activities to the extent possible. In the case of site locations where noise disturbance will be a concern, the contractor shall ensure that the equipment is in good working order with manufacturer supplied noise suppression (mufflers etc.) systems functioning and in good repair.

Where noise management is a concern, the contractor shall make reasonable efforts to schedule activities during normal working hours (between 7 am and 5 pm). Where noise is likely to pose a risk to the surrounding community either by normal works or working outside of normal working hours or on weekends, the contractor shall inform the contracting officer and shall develop a public notification and noise management plan for approval by the contracting officer.

### **6. Use and Management of Hazardous Materials, fuels, solvents and petroleum products**

The use of any hazardous materials including pesticides, oils, fuels and petroleum products shall conform to the proper use recommendations of the product. Waste hazardous materials and their containers shall be disposed of in a manner approved by the contracting officer in accordance with State and/or national laws and the Project ESMP. A site management plan will be developed by the contractor if the operation involves the use of these materials to include estimated quantities to be consumed in the process, storage plans, spill control plans, and waste disposal practices to be followed. Any plans required shall be approved by the contracting officer.

Elements of the hazardous materials management shall include:

- a. Contractor must provide temporary storage on site of all hazardous or toxic substances in safe containers labeled with details of composition, properties and handling information;

- b. Hazardous substances shall be placed in a leak-proof container to prevent spillage and leaching; and
- c. Wastes shall be transported and disposed of in a manner outlined in the ESMP, and cleared by the CIU Safeguards Team compliant with national laws and policies and the ESMP.

### **7. Use and Management of Pesticides**

Any use of pesticides shall be approved by the contracting officer and shall conform to the manufacturers' recommendations for use and application. Any person using pesticides shall demonstrate that they have read and understood these requirements and are capable of complying with the usage recommendations to the satisfaction of the contracting officer. All pesticides to be used shall conform to the list of acceptable pesticides that are not banned by the relevant local authority.

If termite treatment is to be utilized, ensure appropriate chemical management measures are implemented to prevent contamination of surrounding areas, and use only licensed and registered pest control professionals with training and knowledge of proper application methods and techniques.

### **8. Use of Preservatives and Paint Substances**

All paints and preservatives shall only be used with the approval of the CIU Safeguards Team. Information shall be provided to the contracting officer who describes the essential components of the materials to be used so that an informed determination can be made as to the potential for environmental effects and suitability can be made.

Storage, use, and disposal of excess paints and preservatives shall be managed in conformance with the manufacturers' recommendations and as approved by the contracting officer. The contractor shall provide the CIU Safeguards Team with a list of materials and estimated quantities to be used, storage, spill control and waste disposal plans to be observed during the execution of the contract. This plan is subject to the approval of the contracting officer.

### **9. Use of Explosives**

No explosives shall be used on the Project. **10. Site Stabilization and Erosion Control**

The Contractor shall implement measures at the site of operations to manage soil erosion through minimization of excavated area and time of exposure of excavated areas, preservation of existing ground cover to the extent possible, provision of approved ground cover and the use of traps and filtration systems. Where excavations are made, contractor shall implement appropriate stabilizing techniques to prevent cave-in or landslide. Measures shall be approved by the contracting officer.

The contractor must ensure that appropriate erosion control measures such as silt fences are installed. Proper site drainage must be implemented. Any drain clogged by construction material or sediment must be unclogged as soon as possible to prevent overflow and flooding. The use of retaining structures and planting with deep rooted grasses to retain soil during and after works must be considered. The use of bio-engineering methods must be considered as a measure to reduce erosion and land slippage. All slopes and excavated areas must be monitored for movement.

The contractor will establish appropriate erosion and sediment control measures such as hay bales, sedimentation basins, and / or silt fences and traps to prevent sediment from moving off site and causing excessive turbidity in nearby streams, rivers, wetlands, and coastal waters.

The Erosion, Drainage and Sediment Control Management Plan (EDSCP) and Contaminated Soil Disposal Management Plan (CSDMP) will be required where the potential exists for significant sediment accumulation in aquatic and marine systems. This plan shall include a description of the potential threat, mitigation measures to be applied, and consideration for the effects of severe weather and an emergency response plan.

If works are near or within the marine environment, water quality monitoring must be done before construction, and at regular intervals to determine turbidity levels and other quality parameters.

Construction vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies.

### **11. Air Quality**

The Contractor shall comply with the Project ESMP requirements for dust management.

### **12. Traffic Management**

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In the event that construction activities should result in the disruption of area transportation services, including temporary loss of roadways, blockages due to deliveries and site related activities, the contractor shall provide the contracting officer with a traffic management plan including a description of the anticipated service disruptions, community information plan, and traffic control strategy to be implemented so as to minimize the impact to the surrounding community. This plan shall consider time of day for planned disruptions, and shall include consideration for alternative access routes, access to essential services such as medical, disaster evacuation, and other critical services. The plan shall be approved by the contracting officer.

Elements of the traffic management plan to be developed and implemented by contractor shall include:

- a. Alternative routes will be identified in the instance of extended road works or road blockages;
- b. Public notification of all disturbance to their normal routes;
- c. Signage, barriers and traffic diversions must be clearly visible, and the public warned of all potential hazards;
- d. Provision for safe passages and crossings for all pedestrians where construction traffic interferes with their normal route;
- e. Active traffic management by trained and visible staff at the site or along roadways as required to ensure safe and convenient passage for the vehicular and pedestrian public; and
- f. Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement.

Under no circumstances shall the contractor permit the collection of standing water as a consequence of contractor activities to ensure that it does not create breeding grounds for any pests such as mosquitoes.

### **14. Management of Solid Wastes and Construction Debris**

The contractor shall provide a solid waste management plan that conforms to the national solid waste management policies and regulations and the Project EESMP for approval by the CIU Safeguards Team. The site waste management plan shall include a description of waste handling procedures including collection, storage and disposal through the national waste management system. There will be no open burning of waste material and the contractor shall endeavor to recycle wastes as appropriate.

Under no circumstances shall the contractor allow construction wastes to accumulate so as to cause a nuisance or health risk due to the propagation of pests and disease vectors.

### **16. Management of Workers**

The Contractor will prepare a specific Code of Conduct to describe the expected behaviors of their project worker in relation to the local communities and their social sensitivities. This is to avoid creating demand for illegal sex work, avoid gender-based violence and violence against children, manage alcohol consumption and avoid the use of illegal substances, and abide by cultural and social norms of the host community.

The Contractor is to ensure that all overseas project staff undergo a cultural familiarization session as part of their induction training. The purpose of this induction will be to introduce the project staff to the cultural sensitivities of the local communities and the expected behaviors of the staff in their interactions with these communities. Gender based violence and HIV Aids and communicable disease awareness raising and resources shall be provided to all workers. The client shall provide to the Contractor a list of approved service providers, which shall include recognized NGOs and others for conducting this training.

The Contractor is to stipulate the conditions under which visitors may attend the workers accommodation, including curfews.

The Contractor shall ensure that basic social/collective rest and recreation spaces and activities within the workers accommodation to help minimize the impact that the workers would have on the leisure and recreational facilities of the nearby communities.

## Annexure Ten - Codes of Conduct

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### Contractor Code of Conduct – Environment, Social, Health and Safety and Occupational Health and Safety Standards, Preventing Gender Based Violence

The company is committed to ensuring that the project is implemented in such a way which minimizes any negative impacts on the local environment, communities, and its workers. This will be done by respecting the environmental, social, health and safety (ESHS) standards, and ensuring appropriate occupational health and safety (OHS) standards are met. The company is also committed to creating and maintaining an environment where children under the age of 18 will be protected, and where Sexual Exploitation and Abuse (SEA) and sexual harassment have no place. Improper actions towards children, SEA and sexual harassment are acts of Gender Based Violence (GBV) and as such will not be tolerated by any employee, sub-contractors, supplier, associate, or representative of the company.

Therefore, to ensure that all those engaged in the project are aware of this commitment, the company commits to the following core principles and minimum standards of behavior that will apply to all company employees, associates, and representatives, including sub-contractors and suppliers, without exception:

#### General

- a. The company—and therefore all employees, associates, representatives, sub-contractors and suppliers—commits to complying with all relevant national laws, rules and regulations.
- b. The company commits to full implementing its 'Contractors Environmental and Social Management Plan' (C-ESMP) as approved by the client.
- c. The company commits to treating women, children (persons under the age of 18), and men with respect regardless of race, color, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status. Acts of GBV are in violation of this commitment.
- d. The company shall ensure that interactions with local community members are done with respect and non-discrimination.
- e. Demeaning, threatening, harassing, abusive, culturally inappropriate, or sexually provocative language and behavior are prohibited among all company employees, associates, and its representatives, including sub-contractors and suppliers.
- f. The company will follow all reasonable work instructions (including regarding environmental and social norms).
- g. The company will protect and ensure proper use of property (for example, to prohibit theft, carelessness or waste).

#### Health and Safety

- a. The company will ensure that the project's OHS Management Plan is effectively implemented by company's staff, as well as sub-contractors and suppliers.
- b. The company will ensure that all persons on-site wear prescribed and appropriate personal protective equipment, preventing avoidable accidents, and reporting conditions or practices that pose a safety hazard or threaten the environment.
- c. The company will:
  - (i) prohibit the use of alcohol during work activities.
  - (ii) prohibit the use of narcotics or other substances which can impair faculties at all times.
- d. The company will ensure that adequate sanitation facilities are available on site and at any worker accommodations provided to those working on the project.
- e. The company will not hire children under the age of 18 for construction work, or allow them on the work site, due to the hazardous nature of construction sites.

#### Gender Based Violence

- a. Acts of GBV constitute gross misconduct and are therefore grounds for sanctions, which may include penalties and/or termination of employment and, if appropriate, referral to the Police for further action.
- b. All forms of GBV, are unacceptable, regardless of whether they take place on the work site, the work site surroundings, at worker's camps or within the local community.

- c. Sexual harassment of work personnel and staff (e.g. making unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature) are acts of GBV and are prohibited.
- d. Sexual favors (e.g. making promises of favorable treatment such as promotions, threats of unfavorable treatment such as losing a job, payments in kind or in cash dependent on sexual acts) and any form of humiliating, degrading or exploitative behavior are prohibited.
- e. The use of prostitution in any form at any time is strictly prohibited.
- f. Sexual contact or activity with children under 18—including through digital media—is prohibited. Mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.
- g. Unless there is full consent<sup>53</sup> by all parties involved in the sexual act, sexual interactions between the company's employees (at any level) and members of the communities surrounding the workplace are prohibited. This includes relationships involving the withholding/promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex (including prostitution). Such sexual activity is considered "non-consensual" within the scope of this Code.
- h. In addition to company sanctions, legal prosecution of those who commit acts of GBV will be pursued if appropriate.
- i. All employees, including volunteers and sub-contractors are highly encouraged to report suspected or actual acts of GBV by a fellow worker, whether in the same company or not. Reports must be made in accordance with project's GBV Allegation Procedures.
- j. Managers are required to report and act to address suspected or actual acts of GBV as they have a responsibility to uphold company commitments and hold their direct reports responsible.

### Implementation

To ensure that the above principles are implemented effectively the company commits to:

- a. Ensuring that all managers sign the project's 'Manager's Code of Conduct' detailing their responsibilities for implementing the company's commitments and enforcing the responsibilities in the 'Individual Code of Conduct'.
- b. Ensuring that all employees sign the project's 'Individual Code of Conduct' confirming their agreement to comply with ESHS and OHS standards, and not to engage in activities resulting in GBV, child endangerment or abuse, or sexual harassment.
- c. Displaying the Company and Individual Codes of Conduct prominently and in clear view at workers' camps, offices, and in public areas of the workspace. Examples of areas include waiting, rest and lobby areas of sites, canteen areas and health clinics.
- d. Ensuring that posted and distributed copies of the Company and Individual Codes of Conduct are translated into the appropriate language of use in the work site areas as well as for any international staff in their native language.
- e. If required, ensuring that an appropriate person is nominated as the company's 'Focal Point' for addressing GBV issues, including representing the company on the GBV Compliance Team (GCT) which is comprised of representatives from the client, contractor(s), the supervision consultant, and local GBV Service Provider.
- f. If required, ensuring that an effective GBV Action Plan is developed in consultation with the GCT which includes as a minimum:
  - (i) **GBV Allegation Procedure** to report GBV issues through the project Grievance Mechanism (Section 4.3 Action Plan);
  - (ii) **Accountability Measures** to protect confidentiality of all involved (Section 4.4 Action Plan); and,
  - (iii) **Response Protocol** applicable to GBV survivors and perpetrators (Section 4.7 Action Plan).
- g. If required, ensuring that the company effectively implements the agreed final GBV Action Plan, providing feedback to the GCT for improvements and updates as appropriate.
- h. Ensuring that all employees attend an induction training course prior to commencing work on site to ensure they are familiar with the company's commitments to ESHS and OHS standards, and the project's GBV Codes of Conduct.

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<sup>53</sup> **Consent:** refers to when an adult makes an informed choice to agree freely and voluntarily to do something. There is **no** consent when agreement is obtained through the use of threats, force or other forms of coercion, abduction, fraud, manipulation, deception, or misrepresentation; the use of a threat to withhold a benefit to which the person is already entitled, or; a promise made to the person to provide a benefit. In accordance with the United Nations Convention on the Rights of the Child, the World Bank considers that consent cannot be given by children under the age of 18, even if national legislation of the country into which the Code of Conduct is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defense.

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- i. Ensuring that all employees attend a mandatory training course once a month for the duration of the contract starting from the first induction training prior to commencement of work to reinforce the understanding of the project's ESHS and OHS standards and the GBV Code of Conduct.

*I do hereby acknowledge that I have read the foregoing Company Code of Conduct, and on behalf of the company agree to comply with the standards contained therein. I understand my role and responsibilities to support the project's OHS and ESHS standards, and to prevent and respond to GBV. I understand that any action inconsistent with this Company Code of Conduct or failure to act mandated by this Company Code of Conduct may result in disciplinary action.*

Company name: \_\_\_\_\_

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

## Manager's Code of Conduct, Implementing ESHS and OHS Standards, Preventing Gender Based Violence

The company is committed to ensuring that the project is implemented in such a way which minimizes any negative impacts on the local environment, communities, and its workers. This will be done by respecting the environmental, social, health and safety (ESHS) standards, and ensuring appropriate occupational health and safety (OHS) standards are met. The company is also committed to creating and maintaining an environment where children under the age of 18 will be protected, and where Sexual Exploitation and Abuse (SEA) and sexual harassment have no place. Improper actions towards children, SEA and sexual harassment are acts of Gender Based Violence (GBV) and as such will not be tolerated by any employee, sub-contractors, supplier, associate, or representative of the company.

Managers at all levels have a responsibility to uphold the company's commitment. Managers need to support and promote the implementation of the Company Code of Conduct. To that end, managers must adhere to this Manager's Code of Conduct and also to sign the Individual Code of Conduct. This commits them to supporting the implementation of the Contractor's Environmental and Social Management Plan (C-ESMP), the OHS Management Plan, and developing systems that facilitate the implementation of the GBV Action Plan.

Managers need to maintain a safe workplace, as well as a GBV-free environment at the workplace and in the local community. Their responsibilities to achieve this include but are not limited to:

### Implementation

- a. To ensure maximum effectiveness of the Company and Individual Codes of Conduct:
  - (i) Prominently displaying the Company and Individual Codes of Conduct in clear view at workers' camps, offices, and in public areas of the workspace. Examples of areas include waiting, rest and lobby areas of sites, canteen areas and health clinics.
  - (ii) Ensuring all posted and distributed copies of the Company and Individual Codes of Conduct are translated into the appropriate language of use in the work site areas as well as for any international staff in their native language.
- b. Verbally and in writing explain the Company and Individual Codes of Conduct to all staff.
- c. Ensure that:
  - (i) All direct reports sign the 'Individual Code of Conduct', including acknowledgment that they have read and agree with the Code of Conduct.
  - (ii) Staff lists and signed copies of the Individual Code of Conduct are provided to the OHS Manager, the GBV Compliance Team (GCT), and the client.
  - (iii) Participate in training and ensure that staff also participate as outlined below.
  - (iv) Put in place a mechanism for staff to:
    - (A) report concerns on ESHS or OHS compliance; and,
    - (B) confidentially report GBV incidents through the Grievance Mechanism (GM)
  - (v) Staff are encouraged to report suspected or actual ESHS, OHS, GBV issues, emphasizing the staff's responsibility in compliance with applicable laws and to the best of your abilities, prevent perpetrators of sexual exploitation and abuse from being hired, re-hired or deployed. Use background and criminal reference checks for all employees nor ordinarily resident in the country where the works are taking place.
- d. Ensure that when engaging in partnership, sub-contractor, supplier or similar agreements, these agreements:
  - (i) Incorporate the ESHS, OHS, GBV Codes of Conduct as an attachment.
  - (ii) Include the appropriate language requiring such contracting entities and individuals, and their employees and volunteers, to comply with the Individual Codes of Conduct.
  - (iii) Expressly state that the failure of those entities or individuals, as appropriate, to ensure compliance with the ESHS and OHS standards, take preventive measures against GBV, to investigate allegations thereof, or to take corrective actions when GBV has occurred, shall not only constitute grounds for sanctions and penalties in accordance with the Individual Codes of Conduct but also termination of agreements to work on or supply the project.
- e. Provide support and resources to the GCT to create and disseminate internal sensitization initiatives through the awareness-raising strategy under the GBV Action Plan.
- f. Ensure that any GBV complaint warranting Police action is reported to the Police, the client and the World Bank immediately.



- g. Report and act in accordance with the agreed response protocol any suspected or actual acts of GBV.
- h. Ensure that any major ESHS or OHS incidents are reported to the client and the supervision engineer immediately, non-major issues in accordance with the agreed reporting protocol.
- i. Ensure that children under the age of 18 are not present at the construction site or engaged in any hazardous activities.

#### Training

- a. The managers are responsible to:
  - (i) Ensure that the OHS Management Plan is implemented, with suitable training required for all staff, including sub-contractors and suppliers; and,
  - (ii) Ensure that staff have a suitable understanding of the C-ESMP and are trained as appropriate to implement the C-ESMP requirements.
- b. All managers are required to attend an induction manager training course prior to commencing work on site to ensure that they are familiar with their roles and responsibilities in upholding the GBV elements of these Codes of Conduct. This training will be separate from the induction training course required of all employees and will provide managers with the necessary understanding and technical support needed to begin to develop the GBV Action Plan for addressing GBV issues.
- c. Managers are required to attend and assist with the project facilitated monthly training courses for all employees. Managers will be required to introduce the trainings and announce the self-evaluations, including collecting satisfaction surveys to evaluate training experiences and provide advice on improving the effectiveness of training.
- d. Ensure that time is provided during work hours and that staff prior to commencing work on site attend the mandatory project facilitated induction training on:
  - (i) OHS and ESHS; and,
  - (ii) GBV required of all employees.
- e. During civil works, ensure that staff attend ongoing OHS and ESHS training, as well as the monthly mandatory refresher training course required of all employees to on GBV.

#### Response

- a. Managers will be required to take appropriate actions to address any ESHS or OHS incidents.
- b. Regarding GBV:
  - (i) Provide input to the GBV Allegation Procedures and Response Protocol developed by the GCT as part of the final cleared GBV Action Plan.
  - (ii) Once adopted by the Company, managers will uphold the Accountability Measures set forth in the GBV Action Plan to maintain the confidentiality of all employees who report or (allegedly) perpetrate incidences of GBV (unless a breach of confidentiality is required to protect persons or property from serious harm or where required by law).
  - (iii) If a manager develops concerns or suspicions regarding any form of GBV by one of his/her direct reports, or by an employee working for another contractor on the same work site, s/he is required to report the case using the GRM.
  - (iv) Once a sanction has been determined, the relevant manager(s) is/are expected to be personally responsible for ensuring that the measure is effectively enforced, within a maximum timeframe of 14 days from the date on which the decision to sanction was made by the GCT.
  - (v) If a Manager has a conflict of interest due to personal or familial relationships with the survivor and/or perpetrator, he/she must notify the Company and the GCT. The Company will be required to appoint another manager without a conflict of interest to respond to complaints.
  - (vi) Ensure that any GBV issue warranting Police action is reported to the Police, the client and the World Bank immediately
- c. Managers failing address ESHS or OHS incidents or failing to report or comply with the GBV provisions may be subject to disciplinary measures, to be determined and enacted by the Company's CEO, Managing Director or equivalent highest-ranking manager. Those measures may include:
  - (i) Informal warning.
  - (ii) Formal warning.
  - (iii) Additional Training.
  - (iv) Loss of up to one week's salary.

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- (v) Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
  - (vi) Termination of employment.
- d. Ultimately, failure to effectively respond to ESHS, OHS, and GBV cases on the work site by the company's managers or CEO may provide grounds for legal actions by authorities.

*I do hereby acknowledge that I have read the foregoing Manager's Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to ESHS, OHS, and GBV requirements. I understand that any action inconsistent with this Manager's Code of Conduct or failure to act mandated by this Manager's Code of Conduct may result in disciplinary action.*

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

## Individual Code of Conduct – Environment, Social, Health and Safety and Occupational Health and Safety Standards, Preventing Gender Based Violence

I, \_\_\_\_\_, acknowledge that adhering to environmental, social, health and safety (ESHS) standards, following the project's occupational health and safety (OHS) requirements, and preventing Gender Based Violence (GBV) is important.

The Company considers that failure to follow ESHS and OHS standards, or to partake in activities constituting GBV—be it on the work site, the work site surroundings, at workers' camps, or the surrounding communities—constitute acts of gross misconduct and are therefore grounds for sanctions, penalties or potential termination of employment. Prosecution by the Police of those who commit GBV may be pursued if appropriate.

I agree that while working on the project I will:

- a. Consent to a Police background check in any place I have worked for more than six months.
- b. Attend and actively partake in training courses related to ESHS, OHS, and GBV as requested by my employer.
- c. Will wear my personal protective equipment (PPE) at all times when at the work site or engaged in project related activities.
- d. Take all practical steps to implement the environmental and social management plan (ESMP).
- e. Implement the OHS Management Plan.
- f. Adhere to a zero-alcohol policy during work activities, and refrain from the use of narcotics or other substances which can impair faculties at all times.
- g. Treat women, children (persons under the age of 18), and men with respect regardless of race, color, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
- h. Not use language or behavior towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
- i. Not sexually exploit or abuse project beneficiaries and members of the surrounding communities.
- j. Not engage in sexual harassment of work personnel and staff—for instance, making unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature is prohibited. E.g. looking somebody up and down; kissing, howling or smacking sounds; hanging around somebody; whistling and catcalls; in some instances, giving personal gifts.
- k. Not engage in sexual favors—for instance, making promises of favorable treatment (e.g. promotion), threats of unfavorable treatment (e.g. loss of job) or payments in kind or in cash, dependent on sexual acts—or other forms of humiliating, degrading or exploitative behavior.
- l. Not use prostitution in any form at any time.
- m. Not participate in sexual contact or activity with children under the age of 18—including grooming or contact through digital media. Mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.
- n. Unless there is the full consent<sup>54</sup> by all parties involved, I will not have sexual interactions with members of the surrounding communities. This includes relationships involving the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex (including prostitution). Such sexual activity is considered “non-consensual” within the scope of this Code.
- o. Consider reporting through the GRM or to my manager any suspected or actual GBV by a fellow worker, whether employed by my company or not, or any breaches of this Code of Conduct.

With respect to children under the age of 18:

- a. Bring to the attention of my manager the presence of any children on the construction site or engaged in hazardous activities.

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<sup>54</sup> **Consent** is defined as the informed choice underlying an individual's free and voluntary intention, acceptance or agreement to do something. No consent can be found when such acceptance or agreement is obtained using threats, force or other forms of coercion, abduction, fraud, deception, or misrepresentation. In accordance with the United Nations Convention on the Rights of the Child, the World Bank considers that consent cannot be given by children under the age of 18, even if national legislation of the country into which the Code of Conduct is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defense.

- b. Wherever possible, ensure that another adult is present when working in the proximity of children.
- c. Not invite unaccompanied children unrelated to my family into my home, unless they are at immediate risk of injury or in physical danger.
- d. Not use any computers, mobile phones, video and digital cameras or any other medium to exploit or harass children or to access child pornography (see also "Use of children's images for work related purposes" below).
- e. Refrain from physical punishment or discipline of children.
- f. Refrain from hiring children for domestic or other labor below the minimum age of 14 unless national law specifies a higher age, or which places them at significant risk of injury.
- g. Comply with all relevant local legislation, including labor laws in relation to child labor and World Bank's safeguard policies on child labor and minimum age.
- h. Take appropriate caution when photographing or filming children (See Annex 2 for details).

**Use of children's images for work related purposes**

When photographing or filming a child for work related purposes, I must:

- a. Before photographing or filming a child, assess and endeavor to comply with local traditions or restrictions for reproducing personal images.
- b. Before photographing or filming a child, obtain informed consent from the child and a parent or guardian of the child. As part of this I must explain how the photograph or film will be used.
- c. Ensure photographs, films, videos and DVDs present children in a dignified and respectful manner and not in a vulnerable or submissive manner. Children should be adequately clothed and not in poses that could be seen as sexually suggestive.
- d. Ensure images are honest representations of the context and the facts.
- e. Ensure file labels do not reveal identifying information about a child when sending images electronically.

**Sanctions**

I understand that if I breach this Individual Code of Conduct, my employer will take disciplinary action which could include:

- a. Informal warning.
- b. Formal warning.
- c. Additional Training.
- d. Loss of up to one week's salary.
- e. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
- f. Termination of employment.
- g. Report to the Police if warranted.

*I understand that it is my responsibility to ensure that the environmental, social, health and safety standards are met. That I will adhere to the occupational health and safety management plan. That I will avoid actions or behaviors that could be construed as GBV. Any such actions will be a breach this Individual Code of Conduct. I do hereby acknowledge that I have read the foregoing Individual Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to ESHS, OHS, GBV issues. I understand that any action inconsistent with this Individual Code of Conduct or failure to act mandated by this Individual Code of Conduct may result in disciplinary action and may affect my ongoing employment.*

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

## Annexure Eleven – Screening Form

### Safeguards Screening Form

This form is to be used by DoTCI to screen potential environmental and social safeguards issues in subprojects and determine which safeguard instrument/s is to be prepared prior to implementation.

Screening Questions	Answer			If 'Yes', WB ESF triggered.	Documents required if 'Yes'
	Yes	No	N/A		
Are the project impacts likely to have significant adverse environmental impacts that are sensitive, diverse or unprecedented? Please provide brief description.					Not eligible for funding under Digital FSM
Do the impacts affect an area broader than the sites or facilities subject to physical works and are the significant adverse environmental impacts irreversible? Please provide brief description.				World Bank ESF Category A	Not eligible for funding under Digital FSM
Is the proposed project likely to have no adverse environmental impacts? Please provide brief justification.				World Bank ESF Category C	Nothing further required
Is the project neither a Category A nor Category C as defined by the Bank? Please provide brief justification.				World Bank ESF ESS1 Category B	ESIA or limited ESIA, and ESMP
Are the project impacts likely to have significant adverse social impacts that are sensitive, diverse or unprecedented? Please provide brief description.				World Bank ESF ESS1 Category A	Not eligible for funding under Digital FSM
Will the project involve the discharge of pollutants into air, water, soil and/or storage of chemicals, hazardous materials, etc. that pose risks to environmental and public health?				World Bank ESF ESS1 Category A/B	ESIA or Limited ESIA to determine risk level– only Cat B eligible for funding under Digital FSM - ESMP with Waste / Hazardous Materials Management Plan

Digital FSM Environmental and Social Management Plan

Will the project site be located near, waterways or water bodies/ponds?				World Bank ESF ESS1 Category A/B	ESIA or Limited ESIA to determine level of risk/impact – only Cat B eligible for funding under Digital FSM
Will the project adversely impact physical cultural resources? Please provide brief justification.				World Bank ESF ESS8 Category B	ESMP with PCR Management Plan and/or Chance Find Procedures (CFP)
Will any physical works be sited on private freehold (customary), Crown or state land? Will this be acquired through market-based lease, government lease or sublease, purchase, or voluntary donation? Please provide a brief explanation:				World Bank ESF ESS5 Category C	Evidence of Land Title or Voluntary Land Donation Protocol
Will any physical works be sited on communal or collective land? If so, is the land more than 5% of the community's area, and/or do gardens, crops or fixed assets exist on the nominated land? Please provide a brief explanation.				World Bank ESF ESS5 Category A/ B	Resettlement no acceptable under Digital FSM
Does the project involve the donation of land (in-kind) from project-affected persons for facilities or investments that will be of benefit to the broader community? Please provide a brief explanation.				World Bank ESF ESS5 Category C	No land acquisition proposed under Digital FSM All activities to be undertaken on FSM Government Land
Will any physical works be located on land that is used or occupied by persons?				World Bank ESF ESS5 Category B	Digital FSM proposed for government owned and/or-leased land only. Land access agreement
Does the project involve large-scale <sup>55</sup> involuntary land acquisition or physical relocation of people? Please provide brief explanation				World Bank ESF ESS5 Category A	Not eligible for financing under Digital FSM
Does the project involve minor involuntary land acquisition, loss of assets or access to assets, or loss of income sources or means of livelihood? Please provide brief explanation				World Bank ESF ESS5 Category B	No land acquisition under Digital FSM

<sup>55</sup> Physical and/or economic displacement of more than 200 affected people and/or more than 10% of productive assets are lost.