Rapid Vulnerability Assessment Report

Federated States of Micronesia Readiness Phase

Department of Finance and Administration
with the Pacific Community as delivery partner

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February 9, 2016

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1. Executive Summary

In March 2016, the Federated States of Micronesia (FSM) embarked on a partnership with the Green Climate Fund (GCF) to pursue a low carbon and climate resilient development pathway. It established a National Designated Authority (NDA) under the Department of Finance and Administration and secured support for a GCF Readiness Program (March 2016 to June 2018) to facilitate the country's access to the Fund.

This report is a component of the readiness program. It informs the development of the FSM Country Program Strategy (CPS) of priority adaptation investments for GCF support. It conducts a rapid desktop assessment on climate adaptation options in the FSM in line with national priorities as well as with the GCF investment criteria.

The report is composed of four other sections. Section 2 outlines the context of climate adaptation planning in the FSM and identifies the relevance of GCF support. Section 3 summarises the vulnerability status of the FSM and its States. Section 4 reviews key current and planned adaptation responses and options. Section 5 evaluates how well the planned options meet the GCF investment criteria. Finally, section 6 concludes on the findings, challenges and opportunities in strengthening the FSM's adaptive capacity with GCF support.

The report's key findings and recommendations are as follows:

Key findings	Key recommendations
• the FSM States remain highly vulnerable, both at current and projected climate change-induced risks. • the FSM's vulnerability is compounded by institutional fragmentation as well as high financial insecurity that constrain adaptive capacity. • the FSM has a sound policy foundation from which to build institutional coordination and thereby enable consolidation of adaptation options. • The FSM has numerous adaptation options, all which require coordination and consolidation. • the Green Climate Fund can play a critical role in strengthening the FSM's institutional and adaptive capacity.	• Establish effective leadership to guide strengthened coordination and adaptive capacity as per table 2, section 2. • Strengthen the capacity of the Department of Finance and Administration and states-level finance departments to qualify for direct budget support from overseas development assistance as well as for accreditation to the Green Climate Fund. • Enable programmatic funding for multi-year, cross-sectoral adaptation and mitigation initiatives by developing an integrated adaptation framework (or national adaptation plan) while also strengthening overseas development assistance coordination. • Develop a national gender policy to enable the full realisation of the paradigm shift to low-carbon and climate-resilient development in the FSM.

2. Climate Adaptation Planning in the FSM

2.1 Establishing an enabling environment

The availability of climate financing opportunities in recent years has enabled climate adaptation to remain a policy priority for the FSM. Since 2013, the FSM has established concrete policy and planning initiatives to advance adaptation efforts, including a Climate Change Policy and accompanying Climate Change Act, an updated Infrastructure Development Plan (IDP), a Climate Adaptation Guide for Infrastructure, and the development of the Joint State Action Plans for Disaster Risk Management and Climate Change (JSAPs).[1] It has further secured access to the Adaptation Fund through the Micronesia Conservation Trust as its national implementing entity, and the Secretariat of the Pacific Regional Environment Program as its regional implementing entity. As a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), the government has also made an international commitment through its Intended Nationally Determine Contribution (INDC) to reduce greenhouse emissions in the FSM by up to 35 per cent by the year 2025.[2]

The FSM has been careful to support the national Strategic Development Plan (SDP) 2004-2023 in the development of its Climate Change Policy. The goal of the Policy is:

> "*to promote development that proactively integrates the management of disaster and climate related hazards by investing in disaster risk management, climate change adaptation and greenhouse gas emissions reduction in pursuit of a safe, resilient and sustainable future for our country.*"

With the anticipated shortfall in economic assistance under the US Compact (discussed further in section 3.2), it has further ensured that its 2023 Action Plan retains an emphasis on environmental management and climate resilience. The result, on the whole, has been an enabling institutional environment that is facilitating alignment between climate change and development objectives, and has therefore been responsive to the need to mainstream climate change through both policy and development processes. The development of the JSAPs, in particular, are a good example of the attempts to establish consistency in climate change related objectives, strategies and outcomes across development sectors. A next step is to further develop the JSAPs (once all endorsed) into a

[1] Key national and State-specific policies of relevance to climate change and disaster risk management are highlighted with key policy goals and priority actions in each respective State's JSAP. The JSAP for Chuuk State is scheduled for endorsement by mid 2017.

[2] The INDC uses the year 2000 as the base year. The 35% reduction is conditional and subject to the availability of additional financial, technical and capacity building support from the international community. The unconditional target is 28%, also using 2000 as base year. Also note here complementary relationship between mitigation and adaptation: lower greenhouse gas emissions mean less impacts to which adaptation efforts are required.

Joint National Action Plan or national adaptation plan (NAP) that would serve as an integrated adaptation framework for the country.

In this institutional environment, the foundation for transformative development towards low carbon and climate resilience is beginning to take shape. Equipped with an IDP for the next ten years, the FSM anticipates that the year 2017 should see stronger consolidation of adaptation and mitigation efforts with the finalisation of the JSAPs into an integrated adaptation framework, the finalisation of the national (or master) Energy Plan, and the development of the GCF CPS.

2.2 Getting through the main barriers to effective implementation

Notwithstanding these gains, further work is required to fully consolidate adaptation efforts in the FSM. In 2015, the Second National Communication to the UNFCCC presented a comprehensive review of vulnerability and adaptation assessments in the FSM. The findings of the report remain current, particularly those that call for efforts to:

1. develop the full range of sector level policies and strategies that will ensure climate change considerations are mainstreamed in all its development and social economic plans and activities.[3]
2. identify appropriate adaptation measures beyond a generic level; limited understanding of vulnerability to climate change at National, State, island and community levels, have resulted in assessments that are not informed by the results of systematic analyses of current nor future risks.

There are three mutually reinforcing elements that are considered good guides for policy-makers in dealing with climate change mitigation and adaptation (GLOBE International and the Grantham Research Institute, 2014). These are information (tells us where countries are); targets (tell us where countries want to go); and laws and policies (show the way to get there). When current planning gains in the FSM are set against these elements (table 1), we can see the extent of the challenges in fully achieving transformational development for the FSM.

Table 1. Status of transformational development in the FSM

	1. Information	2. Targets	3. Laws and Policies
Purpose; tells us:	where the FSM is at	where it wants to go	how to get there
Present status	limited data available; storage, access and coordinated use minimally applied	• INDC target determined but yet to be applied. • adaptation targets yet to be determined.	Climate Change Policy (2013) and Act (2014) requires supporting sector-based policies and legislation and a national/ integrated adaptation plan
Present assessment	non-transformational	potentially transformational	transformational but incomplete

[3] Assessments have thus far mainly focused on food security as a priority theme.

Underlying these challenges is the absence of enabling or 'transformative' pillars to counter persistent institutional fragmentation and limited labour capacity in the FSM. The main enabling pillars can be identified as leadership, coordination and capacity. Table 2 below sets out how these pillars can enable key areas to further progress adaptation efforts in the FSM. These areas are further discussed in the context of evaluating adaptation options in section 5.

Table 2. Enabling pillars

Pillar	Areas to enable
Leadership	Establish a national Climate Change and Sustainable Development Council to: • streamline the review and approval of investments in adaptation and mitigation projects and programs for the country • guide the development and implementation of a National Adaptation Plan (NAP) for the FSM • guide the development and implementation of a national Capacity Building Plan under the NAP • ensure that the FSM INDC targets are met • ensure compliance and implementation of the Climate Change Act provisions • lead the development of regulatory reforms to incentivize low-emissions pathways • drive the economic and infrastructure development of climate-smart innovative technology across each of the FSM states • ensure that the Overseas Development Assistance (ODA) Policy remains current/ relevant and is implemented • ensure that required institutional coordination for maximising the beneficial impact of climate finance is effective and well-funded.
Coordination	Reactivate and fully resource the States-National Joint Risk Management Network to enable coordination of disaster risk management and climate change issues between: • the national government and the State governments • the national and state governments with Compact-funded initiatives • the national and state governments with municipal and island-level governance agents, non-governmental organisations, intergovernmental organisations and the private sector. Ensure that the terms of reference of the Network include compulsory information-sharing on plans and projects/programs on adaptation and mitigation initiatives. Ensure that representatives from State and national overseas development assistance offices participate in the Network to enable updated reports on ODA funds coordination.

Pillar	Areas to enable
Capacity	Develop, fully resource and implement a Capacity Building Plan under the NAP, that prioritises: • building expertise in the areas of projects/program development and management; overseas development assistance and climate finance management; climate knowledge and data management; climate smart innovation and technologies; climate-smart urban planners; gender and climate change. • state-level capacity: capacity needs are particularly pronounced at the states level. • capacity-strengthening of the Office of Environment and Emergency Management to coordinate climate change activities • capacity-strengthening of the Department of Finance and Administration to receive direct budget support from climate finance donors, as well as to efficiently disburse to the States and other legitimate agencies. • capacity-strengthening of the ODA office to coordinate climate funds with other development funds • provision of incentives and other support to increase the numbers of accredited national implementing entities for climate finance in the FSM.

2.3 The GCF Readiness Program: an immediate way forward

An immediate way forward is possible under the GCF readiness program. The program provides an important impetus to address the above challenges in four ways. Firstly, an Executive Order has been submitted to the President's Office to establish a Climate Change and Sustainable Development Council.[4] A key role for the Council is to approve proposals for funding under the GCF and other donors. More broadly, this national decision-making body will be instrumental in providing leadership and institutional coordination to ensure the effective mainstreaming of climate change into policies and actions across all sectors and initiatives in the country. For example, the Council can ensure compliance with climate change mainstreaming and reporting under the Climate Change Act of 2013.[5] As well, through its guidance on the development of a NAP, it can ensure a systemic approach to climate risks from the national right through to community levels.

Secondly, the NDA, under which the readiness program operates, has been established under the FSM Department of Finance and Administration. This is considered a key step towards establishing the Department as a National Implementing Entity, which will enable climate finance to be centralised, coordinated and streamlined into the country's financial management system. The Department is making strides in strengthening its budgetary and financial management system. In 2016, it completed a Public Expenditure

[4] Following a high-level national meeting on December 2, 2016, the President's Office is currently reviewing the document. A key change put forward as a lesson learned from the now defunct Sustainable Development Council established in the 1990s, is to make attendance of high level officials compulsory.

[5] There has been no submission of annual reports to date and although the Act requires all government departments to have mainstreamed climate change into their respective plans, only the Department of Health and Social Affairs has done so to date. Crucially also, the Act provides for the President to submit an annual climate change budget which has yet to eventuate.

and Financial Accountability Assessment (PEFA); engaged a Compliance Officer at the national level; facilitated a World Bank scoping mission to review and improve the financial management system at the national and states levels; and secured International Development Assistance (IDA) funding from the World Bank to improve its Country Policy and Institutional Assessment (CPIA) rating. In 2017, the Department is set to receive direct budget support from the European Union Development Fund of around 14 million (over 3 years) towards the energy sector.[6] It is also keen to take advantage of available climate finance capacity-building support, such as with the USAID Climate Ready program, towards achieving accreditation to the GCF. In coordination with other key government offices, such as the ODA office, it aims to use the resulting efficiencies to build a programmatic funding approach to adaptation efforts in the FSM (the programmatic approach is discussed further in Section 5). Anticipated results include improved FSM access to international climate finance resources, and improved operational flow of secured climate financial resources from the national level through to the States level.

Thirdly, the program will produce a CPS for GCF access that institutionally aligns priority projects. Horizontally, the CPS will incorporate pathways that take into account multi and cross-sectoral planning in climate adaptation initiatives. Vertically, it will ensure that planning is responsive to the vulnerability and adaptive contexts specific to national, State, outer-island and community levels. The development of the initial CPS will involve a review, consolidation and alignment of the priority projects under the JSAPs and IDP with the GCF funding criteria (Annex 5). The exercise will be careful to include, where possible, priorities coming out of other national plans including the forthcoming national Energy Plan, as well as from non-governmental and private sector driven initiatives. Importantly, the completed CPS (which is scheduled to be completed by June 2017) will be designed to adjust alignment with the NAP, once that plan is developed.

Finally, the program will make good use of the GCF's mandate to strengthen country ownership in effectively accessing and deploying resources from the Fund. It will maximise access to capacity building support, including facilitate support for those organisations seeking accreditation to become national implementing entities. Securing accreditation with the GCF (the largest global climate fund) could result in an increased number of well-qualified organisations within the country to manage large funds and deliver adaptation gains beyond the Fund itself. Indeed, the greater capacity generated by a sizeable number of accredited national entities - both public and private, could significantly contribute to solving the persisting challenges in absorptive capacity within the FSM, thus maximising the use of readily available funds. At present, only the Micronesia Conservation Trust and the FSM Development Bank have received nomination for accreditation by the NDA. Both are expected to receive accreditation in 2017.

[6] Pending the completion of the national/Master Energy Plan.

3. Vulnerability Status in the FSM

3.1 Climate and human-induced vulnerability

The most recent and comprehensive vulnerability assessments in the FSM were undertaken through the development of the JSAPs in 2015.[7] In line with the regional call for urgent action to combat the inter-related impacts of climate change and disasters, the JSAPs were developed to recognise and incorporate disaster risk management into climate change planning. This section presents an overview of vulnerability status, by State, in the FSM based on collated information across the JSAPs. The vulnerability assessment information was collated using a format that measures sensitivity and adaptive capacity to the identified impacts of climate change projections. The contents of the assessment were reviewed by stakeholders at the GCF Inception workshop in November 2016 (refer to Annex 2 for details of the vulnerability assessment by State).

For Yap, recent and current stresses include earthquakes, tsunamis, typhoons, flooding, drought, and high seas storm surges in its outer-islands. For Chuuk: droughts, typhoons, tropical storms, storm-waves, flooding, landslides, and high sea surges in its outer-islands. For Pohnpei: droughts, variable rainfall patterns, typhoons during El Nino periods, tropical storms, and high sea levels during El Nina. For Kosrae: tropical storms and typhoons, drought, landslides, higher than normal high tides, large sea swells, increased impact of storm surges and flooding as a result of sea level rise. Table 3 provides a summary of projected climate change impacts for each state.

Table 3: Projected climate change impacts by States in the FSM

Impacts:	Yap	Chuuk	Pohnpei	Kosrae
Reduced frequency of droughts	✓	✓	✓	✓
Decreased typhoon frequency	✓	✓	✓	✓
Decreased frequency of severe storms	✓	✓	✓	✓
Increased ocean acidity	✓	✓	✓	✓
Rise in sea levels up to 60cm by 2070	✓	✓	✓	✓
Increase in air and sea temperature up to 3.5 degrees celsius.	✓	✓	✓	✓
Land loss via erosion and salination	particularly in the low lying outer islands.	not indicated	particularly in the low lying outer islands.	✓
More often extreme rainfall days	✓	✓	✓	✓

Table 4 summarises the assessment, showing that at present, all states do not have the required 'high' level of adaptive capacity. Despite some variation in their adaptive capacities in the 'medium and low' levels, all States are highly vulnerable due mainly to a combination of capacity issues to respond to climate impacts in a timely manner and to isolated and dispersed geographies. Institutional capacity to secure sufficient funds and implement coordinated adaptation and mitigation projects are slow and challenging; an

[7] For details on population vulnerability, including women, the young, elderly and disabled, see assessments under the National Climate Change and Health Action Plan for the Federated States of Micronesia and the Micronesia Red Cross Society's 'Major vulnerability and hazards analysis' in the FSM in their Strategic Plan 2016 to 2020.

unfortunate result of the barriers discussed in section 2 above. Slow responses make those living in rural areas and outer-islands especially vulnerable, given the long distances, at times unfavourable weather, logistics and high-cost challenges in inter-island transportation that make it particularly difficult to deliver assistance.

Table 4: Summary of vulnerability status by States in the FSM

FSM State:	Sensitivity	Adaptive Capacity	Vulnerability
Yap State	High	Medium	High
Chuuk State	High	Low in all sectors, except Medium in Fisheries, coastal ecosystem and biodiversity	High
Pohnpei State	High	Medium	High
Kosrae State	High	Medium in all sectors, except Low in the Private Sector.	High

A further consideration is the areas with low adaptive capacity. For Kosrae State, its main road is under imminent threat and private sector development is particularly under threat given limited reliable commercial transport to the State. Furthermore, its private sector is largely characterised by a nature-based tourism industry and is therefore highly sensitive to natural disasters and climate-induced changes to the States's natural ecosystem, especially marine. For Chuuk State, adaptive capacity is hampered by a combination of difficult access to outer-islands, land ownership issues, limited infrastructure and low capacity in its key departments, such as in the Chuuk State Department of Agriculture. Finally, all states report a number of human-induced vulnerability which can worsen the impacts of climate-induced hazards, including over-fishing, deforestation and the building of roads and other built infrastructure that negatively impact the coastal environment.

3.2 Financial Vulnerability

Vulnerability in the FSM is characterised not only by climate and human-induced impacts but also by financial insecurity. As the SDP highlights, the FSM economy is to be understood within the two periods under the FSM's Compact of Free Association with the United States. The first or original Compact commenced in 1987 and the second or 'Amended Compact' commenced in 2004; both providing support to the operations of Government and public sector investment. The Amended Compact provides $1.8 billion of funding, including contributions to a Compact Trust Fund (the Fund) intended to replace the assistance upon its termination in 2023. Since 2004, however, the FSM economy has struggled, with its GDP averaging a -0.4 per cent downturn. In 2013, construction activity was constrained by a then outdated IDP while domestic fisheries revenue declined by 15 per cent, thus making 2014 one of the worst period in the FSM's economic performance. With the end of Compact assistance only six years away, the FSM finds itself in a highly insecure financial situation. As the 2023 Action Plan observes:

> *"The projected income from the Fund will not generate sufficient investment returns to replace Amended Compact Grants, with a projected fiscal gap of $41.3 million in FY2024. As*

all sector grants from FY2015 onward are passed on to the State Governments it is here that the fiscal impact will be severely felt." (p6)

Beyond 2023, the FSM's priority is to grow the productive sectors of agriculture, tourism and fisheries so that it can continue funding base social services (health and education) at current levels under the Compact. The fiscal gap as well as the insecure performance of the Fund itself, however, presents a high level of uncertainty in being able to achieve the base funding for social services, let alone raise funds for other development priorities in the area of built infrastructure, energy, information and communications technology, and environmental management. Under these projected economic conditions, the FSM's adaptive capacity is severely jeopardised unless climate finance, such as through the GCF, is accessed to fill the gap.

4. Climate Adaptation Strategies and Options in the FSM

4.1 Current situation of FSM adaptation strategies

Over the last decade, a plethora of adaptation initiatives and projects of various scale and focus have been implemented across the FSM States with the assistance of various agencies at the international, regional, states and community levels, and with funding support ranging from private individual donors to bilateral and multilateral donors. They are further spread across various government departments and agencies as well as across a number of non-governmental organisations. Unfortunately, no official data collection is currently available,[8] nor has there been a dedicated study commissioned to collate and analyse the impacts of the numerous assistance throughout the years, thus leaving a general impression of minimal impact on adaptation gains due to fragmentation.

Nonetheless, the Pacific Community has been a good source of past and ongoing key projects and programs (see Annex 3). This report focuses on adaptation options that are under current and planned initiatives. It identifies only those current key initiatives that can be readily consolidated with the planned projects to meet the requirements of the GCF results framework and investment criteria (Annex 5), and particularly because they either have an entity already accredited to the GCF or have implementing entities which are highly likely to receive GCF accreditation. These initiatives should also be read in the context of the current options list (table 5). The list is a working list with amendments and additions to be made in the course of the CPS development. Further, this report will focus only on those projects planned under the JSAPs, IDP and Enhanced Direct Access (EDA) Pilot track for GCF support.

[8] Following the endorsement of the Overseas Development Assistance (ODA) Policy in 2013, an ODA database was developed in order to capture data of incoming projects, and thereby enable coordination and consolidation of projects in discrete areas, such as those of adaptation-related projects. Unfortunately, the database is not yet at a level at which it is able to provide such information.

4.2 Current key initiatives

The United Nations Development Program (UNDP) has a comprehensive GEF biodiversity portfolio in the FSM (see Annex 4), including a 'ridge to reef' project on biodiversity and natural resource management. The project entitled, *Implementing an integrated "Ridge to Reef" approach to enhance ecosystem services, to conserve globally important biodiversity and to sustain local livelihoods in the FSM*, is a solid example of the first steps being taken by the FSM government to translate policy into implementation. It is a consolidating approach to improving community resilience in the FSM, through an integrated implementation of climate change and disaster risk management considerations with those of sustainable environmental management. It is anticipated that a paradigm shift to a 'ridge to reef' approach within National and State governments will ensure that whole island systems are managed to enhance ecosystem goods and services that sustain livelihoods. Importantly, the project is building on the the Micronesia Challenge program in the FSM, a government commitment to conserve 30% of near shore marine resources and 20% terrestrial resources by 2020. By doing so, the project will enhance capacities to effectively manage FSM's protected area estate as well as increase the coverage of its terrestrial and marine protected area network.

Table 5: Current key adaptation options in the FSM

- UNDP GEF biodiversity portfolio in the FSM, including the 'Ridge to Reef' project (2015-2019)
- Micronesia Challenge and Micronesia Conservation Trust (MCT) capacity building and networking adaptation initiatives
- Omnibus Infrastructure Development project
- International Organisation for Migration (IOM): Disaster, Mitigation, Relief and Reconstruction Program, CADRE Plus program and PREPARE program
- FSM Development Bank's loan program on building energy efficient residences
- Set up of communications and early warning systems and the construction of emergency operations centres
- Establishment of 'food banks' in the States
- Alien Invasive Species identification and control program
- Development of new water sources including well drilling, solar pumps, water containers and catchments
- Implementation and monitoring of the Intended Nationally Determined Contribution (INDC)
- Petrocorp's ventures in renewable energy and value-added agricultural products

The FSM government remains committed to the Micronesia Challenge. Through the Department of Resources and Development and the Office of Environment and Emergency Management, it continues to strengthen its partnership with the Micronesia Conservation Trust (MCT), a non-governmental organisation that manages the Micronesia Challenge. Since 2006, the MCT has grown the Micronesia Challenge program to an endowment fund of currently around USD18 million, and to foster adaptation efforts both at the decision-making level and the community action level. At the policy level, MCT continues to secure support from the FSM's executive leadership to establish a self-sustaining financial mechanism for protected areas management in the

country. At the community level, MCT continues to devolve grants to local conservation partners for capacity building and network coordination on adaptation efforts. Amongst a number of other complementing initiatives in its conservation program portfolio, the MCT has submitted a concept paper to the Adaptation Fund on solutions for reducing community vulnerability to climate change in the FSM. MCT's vast and solid experience in adaptation work in the FSM, its accreditation to the Adaptation Fund, and its forthcoming accreditation to the GCF, makes it a particularly viable partner to progress some of the planned options for GCF support.

A further key initiative can be found in the private sector. The Vital Group (also known as FSM Petrocorp) is the largest supplier of energy in the FSM. As part of its 10-year strategic plan (2015 to 2025), the company is exploring ways to broaden its energy mix by investing in renewable energy development, including solar and potentially, coconut biofuel. The company is also venturing into coconut development as a key agriculture initiative, with "the potential to create 500 jobs and to put $4 million annually into the pockets of outer island and rural households as well as generate over $12 million in annual exports" (page 7, 2023 Action Plan). Given the company's robust corporate governance and financial management systems, it would be a good candidate for GCF accreditation.

4.3 Planned JSAP projects

The JSAPs reviewed vulnerabilities and opportunities for climate-smart development in each state of the FSM. The documents analysed and presented options for implementation of priority projects. Although key indicators and a monitoring and evaluation framework are yet to be developed, each JSAP developed an action plan with suggested policies and actions, their timelines, responsible government offices, and estimated project costs. Each activity matrix in the JSAP was developed through extensive and inclusive stakeholder engagement and addressed adaptation efforts that were considered to be the most impactful and most immediately needed. There are currently one hundred project concepts across the JSAPs (24 for Yap, 21 for Chuuk, 25 for Kosrae, 30 for Pohnpei). For the purposes of this report, they have been clustered into sector programs as per table 6.

4.4 Planned IDP projects

The preparation of the IDP (2016 to 2025) is an example of FSM's first attempt to mainstream adaptation programs into sectoral plans. The IDP thus incorporated JSAP activities in some of its infrastructure projects, such as Yap State's 'Upgrade Critical Infrastructure for Climate Change Resilience' project concept. Other projects included in the IDP are anticipated to contribute to climate change mitigation and adaptation through the building of climate-proof roads; improved access and reduced fuel use from upgraded road systems; increased use of renewable energy; improvements to water supply and sanitation; waste management; and improved inter-island transport. There are currently two hundred and eleven project concepts in the IDP (53 for Yap, 35 for Chuuk, 33 for Kosrae, 57 for Pohnpei). For the purposes of this report, they have been clustered into five climate change-related areas as per table 6.

Table 6: Planned adaptation options by States in the FSM

	JSAP	IDP	EDA
Yap	• Climate and disaster responsive Health systems program • Climate Change and Disaster Risk Management Education program • Resources and Development Environment program • Sustainable Private Sector Development program • Social and Cultural Resilience program • Infrastructure Resilience program • Climate Change and Disaster Risk Coordination program	• Climate Resilient Critical Infrastructure Project • Renewable energy projects • Upgrading of roads • Water supply improvement projects • Waste management projects	• Technical Assistance for Climate Adaptation & Proofing of Infrastructure Projects (national project) • Enhancing Food and Water Security project (a national project) • Improving Access & Enhancing Affordable, Safe and Secured Energy Through New and Renewed Sources
Chuuk	• Climate and disaster responsive health systems program • Infrastructure Resilience program • Resilient Agriculture and Forestry program • Resilient Private Sector Development program • Environmental Adaptation Program • Climate-smart Education and Capacity Building program.	• Upgrade road system • Improvement of the Uman Pedestrian Road • Renewable energy projects • Muti-role Vessel • Water supply improvement projects • Waste management projects	• Technical Assistance for Climate Adaptation & Proofing of Infrastructure Projects • Enhancing Food and Water Security project (a national project) • Improving Access & Enhancing Affordable, Safe and Secured Energy Through New and Renewed Sources
Pohnpei	• Climate and disaster responsive health systems program • Climate Change and Disaster Risk Management Education program • Social and Cultural Resilience program • Resilient Agriculture and Fisheries program • Environmental Adaptation program • Infrastructure Resilience program • Climate Change and Disaster Risk Coordination program • Economic Resilience program	• Upgraded road system • Renewable energy projects • Water supply improvement projects • Waste management projects	• Technical Assistance for Climate Adaptation & Proofing of Infrastructure Projects • Enhancing Food and Water Security project (a national project) • Improving Access & Enhancing Affordable, Safe and Secured Energy Through New and Renewed Sources

	JSAP	IDP	EDA
Kosrae	• Climate and disaster responsive Health systems program • Climate Change and Disaster Risk Management Education program • Environmental Coordination and Adaptation program • Sustainable Private Sector Development program • Social and Cultural Resilience program • Infrastructure Resilience program	• Renewable energy projects • Farm road improvements • Projects under the Kosrae Shoreline Management Plan. • Water supply improvement projects • Waste management projects	• Climate Resilient Inland Road and Relocation Project • Technical Assistance for Climate Adaptation & Proofing of Infrastructure Projects • Enhancing Food and Water Security project (a national project) • Improving Access & Enhancing Affordable, Safe and Secured Energy Through New and Renewed Sources

4.5 Planned EDA projects

The GCF's EDA Pilot phase is designed to enhance or expedite direct access by devolving funding decisions to accredited entities nominated by recipient countries. To secure early access to the pilot program, the FSM assembled an ad-hoc committee to determine priority projects for submission. These include four project ideas in total (table 7). The food and water security and climate proofing projects are at the early stages of project scoping. The inland road and relocation initiative in Kosrae state is at concept note stage. Also at concept note stage is the fourth project on renewable access through the Asian Development Bank's Pacific Islands Renewable Energy Investment Program.[9]

Table 7: FSM planned projects for submission to the GCF EDA Pilot program

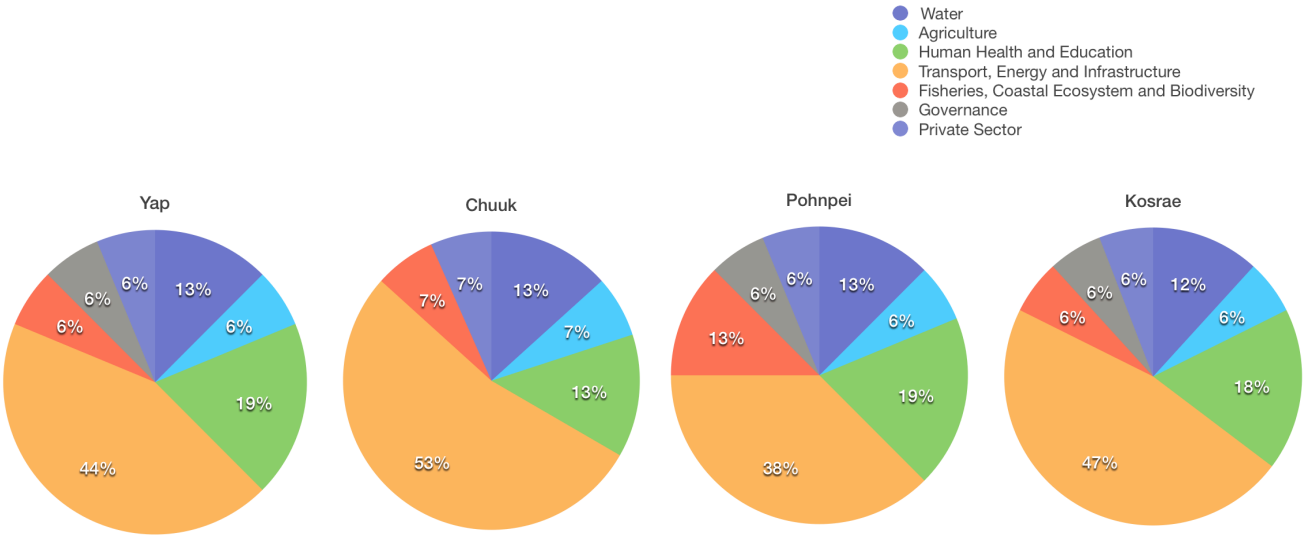
1. Enhancing Food and Water Security project	Food and nutrition security of vulnerable populations; promote value addition and product diversification strategies; and improve access to clean water.
2. Technical Assistance (TA) for Climate Adaptation & Proofing of Infrastructure Projects	TA to facilitate the operationalization of the Infrastructure Development Plan (IDP) and the JSAPs through implementation of designed climate proofed projects and enforcement of building codes.
3. Improving Access & Enhancing Affordable, Safe and Secured Energy Through New and Renewed Sources	Enhanced access to power generation, energy efficiency and development of alternate energy sources via the Pacific Islands Renewable Energy Investment Program, managed by the Asian Development Bank.
4. Kosrae Climate Resilient Inland Road and Relocation Project	Road construction and related public infrastructure for Malem and Utwe communities in Kosrae state; implementing Strategy 1 of the Inland Road and Relocation Initiative under the Kosrae Shoreline Management Plan.

In sum, the FSM's current strategies, though fragmented, have generally incorporated all levels of planning and implementation (i.e. community, municipality, state, national, regional and international). Through past and current initiatives, it has been building adaptive capacity and delivering adaptation gains. Furthermore, albeit slow, there is clear

[9] This program was recently approved at the fifteenth GCF Board meeting (Dec 2016) to begin with its first project in the Cook Islands.

progress towards exploiting new or transformative opportunities across key sectors, which the planned initiatives can further advance. Figure 1 provides a preliminary snapshot of the sector[10] spread of planned options by State.

Figure 1: Planned adaption options sector spread by State



CPS development will provide a more comprehensive sectoral analysis, especially with regards to a balanced approach between mitigation and adaptation efforts as well as with regards to the priority sectors identified in the 2023 Action Plan (tourism, fisheries, agriculture, energy, ICT and infrastructure). Determining the extent of overlap across the planned projects (for example, the Kosrae Inland Road project cuts across the JSAP, IDP and EDA categories) and how best to build on from current initiatives, including public-private partnerships, will be a key exercise in the CPS development workshop with the States, scheduled for early 2017. The development of the CPS will importantly also identify the roles of entities that may be accredited by the Fund in implementing programming priorities. Other planned initiatives, including projects by the MCT and SPREP under the Adaptation Fund, renewable energy programs, eradication of invasive species and additional food security projects being proposed for GEF 6 financing, will also be taken into consideration.

5. Evaluation of Adaptation Options

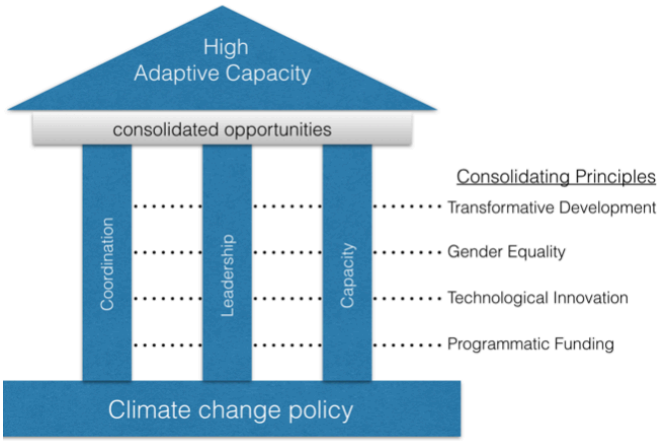
Unlike the more industrialised countries which are locked into high carbon infrastructure, systems and lifestyles, the FSM has the opportunity to leapfrog old and environmentally-destructive technologies. It can build a green economy that is resilient to oil prices spikes

[10] Sectors used are those used in the activity matrix outlined in the JSAPs.

and a changing climate, and with it, a highly adaptive society that can act as stewards of this sustainable economy. Within this favourable setting, the FSM has the opportunity to establish climate-smart infrastructure, and mostly avoid the high cost of retro-fitting or replacing capital intensive infrastructure. Further, it has the opportunity to instil climate-smart social and cultural systems that ensure inclusive and gender-based access to resources, including rights, political voice, employment and information along with access to natural resources.

The adaptation options presented in the previous sections are steps towards this direction. Yet their impactful consolidation is challenged by a number of institutional and capacity barriers (outlined in section 2.2). This section evaluates the current and planned adaptation options within the context of these challenges to ensure that next steps progress through the barriers. It then highlights the reinforcing principles to further guide the next steps towards the consolidation of opportunities. These principles align with the GCF investment criteria and include transformative development, gender equality, technological innovation, and programmatic funding. Figure 2 provides a snapshot of what a high adaptive capacity model may look like for the FSM.

Figure 2: FSM High Adaptive Capacity Model



5.1 Enabling adaptation options

Pillar 1: Effective Leadership

Leadership is required to effectively address challenges as well as consolidate opportunities. Amongst a myriad of policy and planning activities as well as ongoing conferences and workshops related to climate change activities on the one hand, and the limited capacity in FSM government staffing on the other, FSM officials require a clear direction on priorities at the Executive level. Importantly, the direction must be a product of due and transparent process to satisfy funding requirements from the GCF and other donors. As mentioned in section 2, this need for leadership could be achieved by re-establishing the Council on Environmental Management and Sustainable Development. This is particularly urgent in light of the limited institutional and technical capacity to secure funds and implement the large number of planned adaptation options set out in the previous section.

Pillar 2: Timely, coordinated planning between national and state governments

Current and planned adaption options are not only large in numbers but also spread across a range of sectors, and require horizontal and vertical coordination across multiple stakeholders. Most key of these coordination is that between the national and states governments; the implementing responsibility for environmental management lies with the States while climate funding access and disbursement rests primarily at the national level. The state-national coordination process for submitting development project priorities under the ODA Policy is one important coordinating mechanism. Another, as mentioned in section 2, is the Joint Risk Management Network, an important States-national coordination and planning mechanism that include other stakeholders such as non-governmental organisations. Reactivating[11] this network could result in coordination that maximises impact gains, is cost-effective and time-efficient, particularly with regards to timely planning, project formulation and implementation of adaptation options. Currently, the rate at which both climate change and human induced vulnerabilities are occurring in the FSM is unfortunately much faster than the development of response-able capacity within the FSM. Chuuk State is yet to complete and have its JSAP endorsed, leaving the development of priority options for FSM-wide GCF support delayed or uncertain. This may further delay the development of the much-needed NAP. As well, the national Energy Plan needs to be finalised and endorsed with urgency to enable critical synergy with the planned options.

Pillar 3: Strengthened and Targeted Human Resource Capacity

The great majority of adaptation priority options identified in the JSAPs and IDP require technical assistance and training. However, neither plans provide strategic recommendation on the urgent and important need to develop human resource capacity in the public, private and non-governmental sectors. It is urgent for the FSM government to include a Capacity Building Plan in its NAP that include the areas outlined in table 1, section 2. Below is an elaboration on some of these targeted needs:

- Projects design and development capacity to develop current adaptation options into technical proposal stage. Currently, the bulk of the 'transformational' adaptation options for the FSM are at preliminary concept stages, with the great majority having no accredited entity partnership. As the FSM transitions from a Compact State to a classic developmental State, a great deal of expertise in proposal development and projects/program management is becoming an urgent capacity need to secure financing for adaptation and other development work.[12] Beyond the two-year readiness phase of the GCF, the FSM government could consider establishing a mobile

[11] The Network was established between the IOM and the Office of Environment and Emergency Management in 2012 but became inactive in 2014.

[12] The ODA Policy (point no. 33) also identifies this need for capacity in projects development and implementation.

Projects Design and Development Taskforce which could visit and provide ongoing assistance to the States to develop their respective priority options.

- Given the technical difficulties associated with accreditation, this task force could provide additional assistance to develop the potential of organisations for accreditation.
- The great majority of identified priority options respond as much to the challenges of climate change as to urbanisation, including managing climate-induced migration into urban centres. Yet little urban planning input has been included in the concept and design of these options. The taskforce should include technical assistance in urban planning for climate change.
- One of the goals of the GCF and international climate finance in general, is to enhance complementarity and coherence with other international climate funds. The FSM government should ensure that the ODA office is well-capacitated to ensure projects and programs as well as effective donor and other financing partnership relations, are well-coordinated.
- Gender-mainstreaming capacity is an utmost need if adaptation options are to reach their full potential. The impacts of gender-based planning and project formulation is little understood (and therefore, appreciated). Yet they have been shown to increase adaptive capacity when both men and women's needs and vulnerabilities are programmed into the design of adaptation options (discussed further below).
- Data remains the cornerstone of effective adaptation interventions and funding. Yet the capacity to collect, store, manage and apply data in the FSM remains weak. All except the JSAP for Pohnpei identified the need for data collection and management in their adaptation options.

5.2 Consolidating adaptation options

5.2.1 A paradigm shift from 'business as usual' to transformative development

Adaptation approaches in the FSM have been largely incremental (e.g more training, more projects), and oriented to protecting or restoring its environmental and social state with ad hoc corrective changes. Further, there is yet no legislation in draft that directly targets mitigation and adaptation goals, for example to incentivise the development of clean energy and forest protection while discouraging investments in fossil fuel technologies. A clear paradigm shift is required for the planned adaptation options, from 'business as usual' to transformative development. As efforts to address the causes of human-induced climate change appear unlikely to avoid serious impacts, there is a growing sense that transformational, rather than non-systemic, incremental adaptation may be the more effective approach to climate-proofing many systems, locations and sectors. The 'Ridge to

Reef' project is a key initiative to generate the necessary paradigm shift from an ad hoc species/site/problem centric approach to an integrated ecosystem approach in the area of natural resource management. The planned options should build on this by taking advantage of the GCF's paradigm shift requirement towards low emissions and increased resilience which can be a consolidating force to generate transformational changes not only in the FSM's management of its natural environment but also in its economic, social and built infrastructure.

5.2.2 Co-benefits through gender equality

Gender equality in climate change may perhaps be best understood as the 'co-benefits' received by men and women in adaptation efforts. That is, adaptation gains should equally benefit both men and women. However, much of the climate change and gender literature have found that women are generally more vulnerable to climate change than men. For example, more women have died from water-related disasters in the Asia-pacific region in the last decade (Global Gender and Climate Alliance, 2013). In the Pacific region, relative to men, women experience inequality in access to information and decision-making. Further, they live in a cultural environment with strong expectations to care for children and the elderly; in a social environment with high rates of sexual and gender-based violence; and in a political economy with lesser livelihood and political representation opportunities compared to men. This three-edged inequality in cultural, social and economic systems compromises the capabilities of women to build their adaptive capacity relative to men. Yet when their capabilities are enabled, equality increases and allows society as a whole, to achieve greater adaptive capacity (UNFCC, 2014).[13] As the GCF Gender Policy states:

> "*Shifting the paradigm towards low-emission and climate-resilient development pathways requires a large number of individual and collective decisions by women and men. A gender-sensitive approach is therefore part of a paradigm shift.*"

With around half of its population being women, the FSM recognised the importance of gender equality for the realisation of FSM's development goals in its SDP. In the particular context of climate change, the FSM recognises that an equal distribution of adaptation benefits is critical to a holistic success of adaptation efforts, calling for 'special attention to gender issues' in the Climate Change Policy. However, the planned adaptation options addressed these challenges only limitedly in the JSAPs and not at all in the IDP. While the JSAPs were developed with gender-based consultations, gender-based interventions were not fully mainstreamed into the listed options. The JSAPs for Yap and Kosrae had minimal mention of gender or 'women' -based interventions while limiting these only to their 'Social and Cultural' adaptation options. The JSAPs for Pohnpei and Chuuk do not

[13] Excerpted from the website: "…women can (and do) play a critical role in response to climate change due to their local knowledge of and leadership in e.g. sustainable resource management and/or leading sustainable practices at the household and community level. Women's participation at the political level has resulted in greater responsiveness to citizen's needs, often increasing cooperation….At the local level, women's inclusion at the leadership level has lead to improved outcomes of climate related projects and policies."

foreground gender or 'women' in any of their identified adaption options. In observation of the GCF Gender Policy, the CPS development will promote the mainstreaming of gender equality across all the planned options. The 'inclusive' exercise is anticipated to increase effectiveness of identified solutions in adaptation options, and thereby maximise investment impacts. However, it should be noted that systemic change and gains will be possible only through the development of a national gender policy (NGP), as called for in the FSM SDP back in 2004.

5.2.3 Partnerships in technological innovation

The Climate Change Policy calls for 'innovative and creative thinking' and recognises that 'climate change may provide opportunities to embark on more sustainable development pathways making use of new approaches and technologies that are climate and environment friendly'. Furthermore, the IDP states that the FSM telecommunications company 'will continue to roll out the latest communications technology with plans to bring 3G and 4G cellular services to the whole of FSM through an expanded cellular network.' Yet further advances are required; only the Kosrae JSAP indicates technological innovation in its infrastructure-based adaptation options. And while the IDP includes renewable energy technologies, there is an absence of technologically innovative approaches that would complement the options under the Plan.

A way for the FSM to build technological innovation in its adaptation efforts is through 'transformational' partnerships. Past and current adaptation efforts have been made possible through partnerships between the FSM government and non-governmental, intergovernmental organisations as well as with bilateral and multilateral partners, and to a lesser extent, partners from the private sector. However, these partnerships have mostly followed the path of 'business as usual'. Recent partnerships, such as with Japan under its Pacific Environment Community project for solar installation in the FSM, are more the exception rather than the rule. A transformative pathway will require partnerships that will foster transformational technology transfer from other countries including the latest power generation technology, energy and water efficient technology, early warning systems and soil management. Technology and knowledge can also be transferred through the private sector or development partners such as the United Nations Industrial Development Organisation (UNIDO) and the World Business Council for Sustainable Development (WBCSD), which set up the Eco-Patent Commons to provide free access to patents for environmentally beneficial knowledge and technology. Other opportunities in this area can include applying for a Technology Needs Assessment with assistance from the United Nations Environment Program (UNEP), and for technology transfer through the Technology Mechanism agreed at Conference of Parties (COP)16 aimed at boosting global clean technology cooperation.

Partnerships could be sought to assist the FSM into setting up a centre for climate innovation that would facilitate private sector development and to support small to medium enterprises in providing goods and services for climate resilient low carbon

development. These centres can accelerate the deployment of climate technologies, companies and industries by identifying and analysing support networks, centres of excellence, gaps in institutional capacity and in financing. A priority in this area could be to develop links to regional and international centres of excellence to benefit from the latest research on climate resilience and low carbon development.

The development of the planned adaption options under the CPS will attempt to maximise these opportunities by encouraging such partnerships and closely following the developments of GCF support in this area, particularly in facilitating access to environmentally sound technologies and to collaborative research and development.

5.2.4 Programmatic funding approach

In order to create efficiencies in financing adaptation efforts in the FSM, the planned options will need to shift from a project-by-project funding approach to a programmatic approach. This consolidating approach can achieve greater impact as it enables deeper integration and synergies across sectors and thereby deliver sustained climate results and impact efficiently, effectively and at scale. Moreover, the coordinating and holistic characteristics of this approach is more likely to foster the required paradigm shift (section 5.2.1), compared to a project-centric approach.

The planned options under the JSAPs, IDP and EDA pilot program are mostly discrete projects with little programming built into them. In aligning with processes under the ODA policy, the development of the CPS can begin a consolidation of the planned options under a programmatic approach. However, a fully programmatic approach is possible only until the required minimum portfolio of policies and plans are completed (or turned 'green' as per table 8). Most urgent among these is the completion of the NAP. The NAP is a much-needed reference framework to define targets, and ensure a balanced approach in adaptation planning and implementation across the FSM. Balanced and coordinated action is required across adaptation and mitigation actions; across States; across sectors; and across prioritisation needs between short term, near term and long term strategies and actions. The NAP can

Table 8. FSM policy and plans map vis-à-vis the GCF investment criteria

1. Impact results; mitigation and resilience results framework	2. Paradigm shift; systemic change to low carbon and climate resilient pathways	3. Financing needs of beneficiary country; lack of alternative funding sources	4.Country ownership; including implementation capacity	5. Efficiency & effectiveness; cost benefit analysis	6. Sustainable development impacts; gender, jobs and other benefits
Climate Change (CC) Policy			CC Policy		CC Policy
		Overseas Development Assistance Policy			
National Adaptation Plan (NAP)			NAP		
Sector Plans			Sector Plans		
National Gender Policy (NGP)			NGP		

Note: Green: in place. Light Grey: partly completed e.g. IDP and Climate Change Health Action Plan.
Dark Grey: to be completed.

also importantly address policy, data and capacity gaps to strengthen access to global climate finance for adaptation and mitigation priorities.

6. Conclusion

While the FSM has established a sound climate change policy foundation, further progress in climate adaptation planning will mainly depend on the enabling pillars of leadership, coordination and capacity. Coordination between the States and national governments as well as amongst non-governmental organisations, intergovernmental organisations and the private sector remains a major challenge. While the development of the JSAPs present a good example of gains in this area, the JSAP for Chuuk state is yet to be endorsed, leaving further progress delayed or uncertain. Consolidation of multiple adaptation initiatives, both present and past, has largely been absent, thereby making future programming challenging. Further, continued limited availability of skilled and qualified labour in the FSM workforce, has resulted in insufficient capacity to absorb funds, including limited technical capacity to develop and implement projects and programs.

Despite the many challenges, there are tangible opportunities for transformative development in the FSM. The policy advances in climate change, and the resulting development and implementation of the 'Ridge to Reef' project, are testaments that the transformational development paradigm shift has already occurred at influential levels. It seems therefore just a matter of time once the shift is incentivised and expanded to a climate-smart economy with GCF support, and subsequently, fully translated at the action level. If the FSM uses this time to enable the key pillars and complete its policy portfolio (table 8), it will be able to maximise access to the wide range of climate financing opportunities. More importantly, it will improve planning and coordination that will ultimately result in a high level of adaptive capacity across all its states.

Annex 1: Key Documents Consulted

Aguilar, L., Granat, M., & Owren, C. (2015). *Roots for the future: The landscape and way forward on gender and climate change.* Washington, DC: International Union for Conservation of Nature (IUCN) & Global Gender and Climate Change Alliance (GGCCA).

Asian Development Bank (2005): Climate Proofing: A Risk-based Approach to Adaptation, prepared by Hay, J.E., R. Warrick, C. Cheatham, T. Manarangi-Trott, J. Konno and P. Hartley.

GLOBE International and the Grantham Research Institute on Climate Change and Environment, (2014). "What Makes Effective Climate Legislation?", consultation paper for the GLOBE International, second World Summit of Legislators, Mexico.

Global Gender and Climate Alliance, 'Overview of Linkages between Gender and Climate Change', in *Gender and Climate Change: Asia and the Pacific, Policy Brief 1,* United Nations Development Program, 2013.

Federated States of Micronesia(2014), 2023 Action Plan, prepared by the 2023 Planning Committee. DRAFT.

Federated States of Micronesia, Yap Joint State Action Plan for Disaster Risk Management and Climate Change (2016), prepared by the the Pacific Community.

Federated States of Micronesia, Kosrae Joint State Action Plan for Disaster Risk Management and Climate Change (2016), prepared by the Pacific Community.

Federated States of Micronesia, Pohnpei Joint State Action Plan for Disaster Risk Management and Climate Change (2016), prepared the Pacific Community. DRAFT

Federated States of Micronesia, Chuuk Joint State Action Plan for Disaster Risk Management and Climate Change (2016), prepared by the Pacific Community. DRAFT

Federated States of Micronesia, Department of Transportation, Communications and Infrastructure (2015) Climate Adaptation Guide for Infrastructure, V1.0, prepared by Asian Development Bank TA7927: FSM Strengthening Infrastructure Planning and Implementation

Federated States of Micronesia, Department of Transportation, Communications and Infrastructure (2016) Federated States of Micronesia, Infrastructure Development Plan FY2016 to FY2025.

Federated States of Micronesia (2013), Federated States of Micronesia: Nation Wide Integrated Disaster Risk Management and Climate Change Policy.

Federated States of Micronesia (2014), Federated States of Micronesia Climate Change Act, Public Law No. 18-34, title 25 of the Code of the Federated States of Micronesia, Chapter 8.

Federated States of Micronesia (2012), National Climate Change and Health Action Plan, with assistance by the World Health Organization (WHO).

Federated States of Micronesia (2015) Intended Nationally Determined Contribution, prepared with assistance by the Government of Germany Ministry for the Environment, Nature Conservation, Building and Nuclear Safety.

Federated States of Micronesia (2015), Implementing an integrated "Ridge to Reef" approach to enhance ecosystem services, to conserve globally important biodiversity and to sustain local livelihoods in the FSM, ProDoc for the United Nations Development Program Global Environmental Facility-5 United Nations Environmental Program.

Federated States of Micronesia (2015), Second National Communication to the United Nations Framework Convention on Climate Change, prepared with the assistance of the United National Development Program Global Environmental Facility.

Federated States of Micronesia (2013), Policy for Overseas Development Assistance (ODA), with assistance from Australian Aid.

Green Climate Fund (2014), Gender Policy and Action Plan, GCF/B.08/19

Micronesia Red Cross Society, *Strategic Plan 2016 to 2020,* in association with the International Federation of Red Cross and Red Crescent Societies and the American Red Cross.

Secretariat of the Pacific Community (2013), Review of Mainstreaming of Climate Change into national plans and policies, Federated States of Micronesia, prepared through the Planning 4 Sustainable Development and the Four Assist Network of Experts.

United Nations Framework Convention on Climate Change, (2005) Technical Paper 3: Assessing Vulnerability for Climate Adaptation, prepared by Downing, T.E. et al.

Annex 2: Vulnerability Assessment by State

YAP STATE			Vulnerability Assessment		
Planning Area	**Current and Expected Stresses**	**Projected Climate Change Impacts**	**Sensitivity [Ideal: LOW]**	**Adaptive Capacity [Ideal: LOW]**	**Vulnerability [Ideal: LOW]**
Water Resources and Sanitation	Earthquakes, Tsunamis, Typhoons, Flooding Drought, High seas storm surges, human-induced vulnerabilities.	Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Increased ocean acidity	**HIGH**: water supply and sanitation sensitive to periods of low rainfall, limited groundwater, challenges in timely outer-island access, and flooding events associated with typhoons.	**MED**: Can upgrade system through priority projects under the JSAP but costly.	**HIGH** - although project priorities have been identified and endorsed, and some projected climate impacts are favourable, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging given the remote and dispersed islands of Yap.
Agriculture	Earthquakes, Tsunamis, Typhoons, Flooding Drought, Wildfires, High seas storm surges, human-induced vulnerabilities.	Increase in air and sea temperature up to 3.5 degrees celsius. Increased ocean acidity Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Rise in sea levels up to 60cm by 2070 Land loss via erosion, particularly in the low lying outer islands.	**HIGH** - agricultural production sensitive to periods of low rainfall, limited groundwater, flooding events associated with typhoons, salinisation of agricultural land, high seas storm surges in outlying islands and coastal areas of Yap Proper	**MED**: Can address challenges through priority projects under the JSAP but costly. Current efforts already underway under the "Ridge to Reef" project focusing on sustainable land management.	**HIGH**: although project priorities have been identified and endorsed, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging given the remote and dispersed islands of Yap. Agriculture Policy as well as food and farming systems do not address the impacts of climate change relating to biodiversity, sufficient skilled labour and supporting infrastructure.
Human Health	Earthquakes, Tsunamis, Typhoons, Flooding Drought, Wildfires, human-induced vulnerabilities.	Increase in air and sea temperature (up to 3.5 degrees celsius). Decreased typhoon frequency Decreased frequency of severe storms Rise in sea levels up to 60cm by 2070 Increased ocean acidity	**HIGH** - human health sensitive to natural disasters, vector borne and other diseases due to warmer climate, contaminated water, poor nutrition due to compromised crops and fisheries.	**MED** - Can address challenges through priority projects under the JSAP but costly. National Climate Change and Health Action Plan endorsed.	**HIGH** - although project priorities have been identified and endorsed, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging given the remote and dispersed islands of Yap.
Transport and Infrastructure	Earthquakes, Tsunamis, Typhoons, Flooding Drought, Wildfires, human-induced vulnerabilities.	Increase in air and sea temperature (up to 3.5 degrees celsius). Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Rise in sea levels up to 60cm by 2070 Increased ocean acidity	**HIGH**- Infrastructure sensitive to natural disasters and rise in sea levels.	**MED** - Can address challenges through priority projects under the JSAP and IDP but costly. 10-year IDP endorsed.	**HIGH** - although project priorities have been identified and endorsed, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging given the remote and dispersed islands of Yap.

YAP STATE -cont.			Vulnerability Assessment		
Planning Area	**Current and Expected Stresses**	**Projected Climate Change Impacts**	**Sensitivity [Ideal: LOW]**	**Adaptive Capacity [Ideal: LOW]**	**Vulnerability [Ideal: LOW]**
Fisheries, coastal ecosystem and biodiversity	Drought, Wildfires, human-induced vulnerabilities.	Increase in air and sea temperature (up to 3.5 degrees celsius). Rise in sea levels up to 60cm by 2070 Increased ocean acidity	**HIGH** - coastal eco system health sensitive to rising sea levels, ocean acidification and human-induced vulnerabilities.	**MED-** Can address challenges through priority projects under the JSAP but costly. Current efforts already underway under the "Ridge to Reef" project focusing on protected areas management, the Micronesia Challenge FSM program, and under the TNC Adaptation projects.	**HIGH -** although project priorities have been identified and endorsed, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging given the remote and dispersed islands of Yap.
Private Sector	Earthquakes, Tsunamis, Typhoons, Flooding Drought,	Increase in air and sea temperature (up to 3.5 degrees celsius). Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Rise in sea levels up to 60cm by 2070 Increased ocean acidity	**HIGH** - private sector sensitive to natural disasters and climate-induced changes to the natural ecosystem, especially marine.	**MED** - Can address challenges through priority projects under the JSAP but costly. Current efforts already underway under the "Ridge to Reef" project focusing on protected areas management, and under the Micronesia Challenge FSM program.	**HIGH** - although project priorities have been identified and endorsed, and some projected climate impacts are favourable, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging given the remote and dispersed islands of Yap.

KOSRAE STATE			Vulnerability Assessment		
Planning Area	**Current and Expected Stresses**	**Projected Climate Change Impacts**	**Sensitivity [Ideal: LOW]**	**Adaptive Capacity [Ideal: HIGH]**	**Vulnerability [Ideal: LOW]**
Water Resources and Sanitation	Higher than normal high tides, large sea swells, increased impact of storm surges and flooding as a result of sea level rise, tropical storms and typhoons, drought, landslides, human-induced vulnerabilities.	Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Increased ocean acidity	**HIGH**: despite high rainfall and infrequent droughts, water resources sensitive to sanitary controls and deforestation of the watersheds, and well managed catchments given that public water is not fit for drinking.	**MED**: Can upgrade system through priority projects under the JSAP, but costly. Current initiatives under the State Land Use Plans, "Ridge to Reef" project and Micronesia Challenge terrestrial program already underway.	**HIGH** - although project priorities have been identified and endorsed, and some projected climate impacts are favourable, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging.
Agriculture	Higher than normal high tides, large sea swells, increased impact of storm surges and flooding as a result of sea level rise, tropical storms and typhoons, drought, landslides, human-induced vulnerabilities.	Increase in air and sea temperature up to 3.5 degrees celsius. Increased ocean acidity Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Rise in sea levels up to 60cm by 2070 Land loss via erosion.	**HIGH** - agricultural production sensitive to flooding events associated with typhoons, salinisation of agricultural land, high seas and storm surges	**MED**: Can address challenges through priority projects under the JSAP but costly. Current efforts already underway under the "Ridge to Reef" project focusing on sustainable land management.	**HIGH**: although project priorities have been identified and endorsed, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging. Agriculture Policy as well as food and farming systems do not address the impacts of climate change relating to biodiversity, sufficient skilled labour and supporting infrastructure.

KOSRAE STATE -cont.			Vulnerability Assessment		
Planning Area	**Current and Expected Stresses**	**Projected Climate Change Impacts**	**Sensitivity [Ideal: LOW]**	**Adaptive Capacity [Ideal: HIGH]**	**Vulnerability [Ideal: LOW]**
Human Health	Higher than normal high tides, large sea swells, increased impact of storm surges and flooding as a result of sea level rise, tropical storms and typhoons, drought, landslides, human-induced vulnerabilities.	Increase in air and sea temperature (up to 3.5 degrees celsius). Decreased typhoon frequency Decreased frequency of severe storms Rise in sea levels up p 60cm by 2070 Increased ocean acidity	**HIGH** - human health sensitive to natural disasters, vector borne and other diseases due to warmer climate, contaminated water, poor nutrition due to compromised crops and fisheries.	**MED** - Can address challenges through priority projects under the JSAP but costly. National Climate Change and Health Action Plan endorsed. Some efforts already underway.	**HIGH** - although project priorities have been identified and endorsed, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging.
Infrastructure	Higher than normal high tides, large sea swells, increased impact of storm surges and flooding as a result of sea level rise, tropical storms and typhoons, drought, landslides, human-induced vulnerabilities.	Increase in air and sea temperature (up to 3.5 degrees celsius). Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Rise in sea levels up p 60cm by 2070 Increased ocean acidity	**HIGH**- Infrastructure sensitive to natural disasters and rise in sea levels.	**MED** - Can address challenges through priority projects under the JSAP and IDP but costly. 10-year IDP endorsed. Some efforts already underway including under the Kosrae State Hazard Mitigation Plan and Kosrae Shoreline Management Plan.	**HIGH** - although project priorities have been identified and endorsed, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging.
Fisheries, coastal ecosystem and biodiversity	Higher than normal high tides, large sea swells, increased impact of storm surges and flooding as a result of sea level rise, tropical storms and typhoons, drought, landslides, human-induced vulnerabilities.	Increase in air and sea temperature (up to 3.5 degrees celsius). Rise in sea levels up p 60cm by 2070 Increased ocean acidity	**HIGH** - coastal eco system health sensitive to rising sea levels, ocean acidification and human-induced vulnerabilities.	**MED** - Can address challenges through priority projects under the JSAP but costly. Current efforts already underway under the "Ridge to Reef" project focusing on protected areas management, the Micronesia Challenge FSM program, and under the TNC Adaptation projects.	**HIGH -** although project priorities have been identified and endorsed, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging.
Private Sector	Higher than normal high tides, large sea swells, increased impact of storm surges and flooding as a result of sea level rise, tropical storms and typhoons, drought, landslides, human-induced vulnerabilities.	Increase in air and sea temperature (up to 3.5 degrees celsius). Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Rise in sea levels up p 60cm by 2070 Increased ocean acidity	**HIGH** - private sector sensitive to natural disasters and climate-induced changes to the natural ecosystem, especially marine.	**LOW** - Can address challenges through priority projects under the JSAP but costly. Current efforts already underway under the "Ridge to Reef" project focusing on protected areas management, and under the Micronesia Challenge FSM program. The lack of reliable commercial transport to Kosrae is a big challenge.	**HIGH** - although project priorities have been identified and endorsed, and some projected climate impacts are favourable, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging.

POHNPEI STATE			Vulnerability Assessment		
Planning Area	**Current and Expected Stresses**	**Projected Climate Change Impacts**	**Sensitivity [Ideal: LOW]**	**Adaptive Capacity [Ideal: HIGH]**	**Vulnerability [Ideal: LOW]**
Water Resources and Sanitation	Droughts, variable rainfall patterns, typhoons during El Nino periods, tropical storms, high sea levels during El Nina, human-induced vulnerabilities.	More often extreme rainfall days Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms	**HIGH**: water resources sensitive to droughts or variable rainfall, poor wastewater management, deforestation and poor management of watersheds, limited groundwater in outlying islands, poor inter-island transport services.	**MED**: Can upgrade system through priority projects under the JSAP, but costly. Current initiatives including, "Ridge to Reef" project and Micronesia Challenge terrestrial program underway. As the nation's capital State, Pohnpei has the advantage on availability and accessibility of assistance.	**HIGH** - although project priorities have been identified, they are yet to be endorsed. Despite some favourable projected climate impacts, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging, especially given Pohnpei's remote and dispersed outer-islands.
Agriculture	Droughts, variable rainfall patterns, typhoons during El Nino periods, tropical storms, high sea levels during El Nina, human-induced vulnerabilities.	Increase in air and sea temperature More often extreme rainfall days Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Increased ocean acidity Rise in sea levels up to 60cm by 2070	**HIGH** - agricultural production sensitive to flooding events associated with typhoons, salinisation of agricultural land, high seas and storm surges on outerislands.	**MED**: Can upgrade system through priority projects under the JSAP, but costly. Current initiatives including, "Ridge to Reef" project and Micronesia Challenge terrestrial program underway. As the nation's capital State, Pohnpei has the advantage on availability and accessibility of assistance.	**HIGH** - although project priorities have been identified, they are yet to be endorsed. Despite some favourable projected climate impacts, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging, especially given Pohnpei's remote and dispersed outer-islands. Agriculture Policy, food and farming systems do not address the impacts of climate change sufficiently with gaps relating to biodiversity, sufficient skilled labour and supporting infrastructure
Human Health	Droughts, variable rainfall patterns, typhoons during El Nino periods, tropical storms, high sea levels during El Nina, human-induced vulnerabilities.	Increase in air and sea temperature (up to 3.5 degrees celsius). Decreased typhoon frequency Decreased frequency of severe storms Rise in sea levels up p 60cm by 2070 Increased ocean acidity	**HIGH** - human health sensitive to natural disasters, vector borne and other diseases due to warmer climate, contaminated water, poor nutrition due to compromised crops and fisheries.	**MED** - Can address challenges through priority projects under the JSAP but costly. National Climate Change and Health Action Plan endorsed. Access to outer-islands is challenging given large distances between islands and undeveloped inter-island transportation. As the nation's capital State, Pohnpei has the advantage on availability and accessibility of assistance.	**HIGH** - although project priorities have been identified, they are yet to be endorsed. Despite some favourable projected climate impacts, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging, especially given Pohnpei's remote and dispersed outer-islands.
Infrastructure	Droughts, variable rainfall patterns, typhoons during El Nino periods, tropical storms, high sea levels during El Nina, human-induced vulnerabilities.	Increase in air and sea temperature More often extreme rainfall days Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Increased ocean acidity Rise in sea levels up to 60cm by 2070	**HIGH**- Infrastructure sensitive to natural disasters and rise in sea levels, as well as shoreline protection given that the central business district and airport are in locations that are at risk of sea level rise.	**MED** - Can address challenges through priority projects under the JSAP and IDP but costly. 10-year IDP endorsed. As the nation's capital State, Pohnpei has the advantage on availability and accessibility of assistance.	**HIGH** - although project priorities have been identified, they are yet to be endorsed. Despite some favourable projected climate impacts, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging, especially given Pohnpei's remote and dispersed outer-islands.

POHNPEI STATE -cont.	*PLAN YET TO BE ENDORSED		Vulnerability Assessment		
Planning Area	**Current and Expected Stresses**	**Projected Climate Change Impacts**	**Sensitivity [Ideal: LOW]**	**Adaptive Capacity [Ideal: HIGH]**	**Vulnerability [Ideal: LOW]**
Fisheries, coastal ecosystem and biodiversity	Droughts, variable rainfall patterns, typhoons during El Nino periods, tropical storms, high sea levels during El Nina, human-induced vulnerabilities.	Increase in air and sea temperature (up to 3.5 degrees celsius). Rise in sea levels up p 60cm by 2070 Increased ocean acidity	**HIGH** - coastal eco system health sensitive to rising sea levels, ocean acidification and human-induced vulnerabilities.	**MED** - Can address challenges through priority projects under the JSAP but costly. Current efforts already underway under the "Ridge to Reef" project focusing on protected areas management, the Micronesia Challenge FSM program, and under the TNC Adaptation projects. As the nation's capital State, Pohnpei has the advantage on availability and accessibility of assistance.	**HIGH** - although project priorities have been identified, they are yet to be endorsed. Despite some favourable projected climate impacts, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging, especially given Pohnpei's remote and dispersed outer-islands.
Private Sector	Droughts, variable rainfall patterns, typhoons during El Nino periods, tropical storms, high sea levels during El Nina, human-induced vulnerabilities.	Increase in air and sea temperature (up to 3.5 degrees celsius). Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Rise in sea levels up p 60cm by 2070 Increased ocean acidity	**HIGH** - private sector sensitive to poor maintenance of infrastructure, natural disasters and climate-induced changes to the natural ecosystem, especially marine.	**MED** - Can address challenges through priority projects under the JSAP but costly. Current efforts already underway. As the nation's capital State, Pohnpei has the advantage on availability and accessibility of assistance.	**HIGH** - although project priorities have been identified, they are yet to be endorsed. Despite some favourable projected climate impacts, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging, especially given Pohnpei's remote and dispersed outer-islands.

CHUUK STATE	*PLAN YET TO BE ENDORSED		Vulnerability Assessment		
Planning Area*	**Current and Expected Stresses**	**Projected Climate Change Impacts**	**Sensitivity [Ideal: LOW]**	**Adaptive Capacity [Ideal: HIGH]**	**Vulnerability [Ideal: LOW]**
Water Resources and Sanitation	Droughts, typhoons, tropical storms, stormwaves, flooding, landslides, high sea surges in outer-islands, human-induced vulnerabilities.	More often extreme rainfall days Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms	**HIGH**: water resources sensitive to sanitary controls, especially water waste management, and deforestation of watersheds, poor sanitation services especially for outer-islands.	**MED**: Can upgrade system through priority projects under the JSAP, but costly. Current initiatives including, "Ridge to Reef" project and Micronesia Challenge terrestrial program already underway.	**HIGH** - although project priorities have been identified, they are yet to be endorsed. Despite some favourable projected climate impacts, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging, especially given the land ownership issues in Chuuk and its remote and dispersed islands.

CHUUK STATE -cont.	*PLAN YET TO BE ENDORSED		Vulnerability Assessment		
Planning Area*	**Current and Expected Stresses**	**Projected Climate Change Impacts**	**Sensitivity [Ideal: LOW]**	**Adaptive Capacity [Ideal: HIGH]**	**Vulnerability [Ideal: LOW]**
Agriculture	Droughts, typhoons, tropical storms, stormwaves, flooding, landslides, high sea surges in outer-islands, human-induced vulnerabilities.	Increase in air and sea temperature More often extreme rainfall days Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Increased ocean acidity Rise in sea levels up to 60cm by 2070	**HIGH** - agricultural production sensitive to flooding events associated with typhoons, salinisation of agricultural land, high seas and storm surges on outerislands.	**LOW**: Can address challenges through priority projects under the JSAP but costly. Current efforts underway under the "Ridge to Reef" project focusing on sustainable land management. However, the low capacity of the Chuuk State Department of Agriculture.	**HIGH** - although project priorities have been identified, they are yet to be endorsed. Despite some favourable projected climate impacts, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging, especially given the land ownership issues in Chuuk and its remote and dispersed islands.Agriculture Policy, food and farming systems do not address the impacts of climate change sufficiently with gaps relating to biodiversity, sufficient skilled labour and supporting infrastructure.
Human Health	Droughts, typhoons, tropical storms, stormwaves, flooding, landslides, high sea surges in outer-islands, human-induced vulnerabilities.	Increase in air and sea temperature (up to 3.5 degrees celsius). Decreased typhoon frequency Decreased frequency of severe storms Rise in sea levels up p 60cm by 2070 Increased ocean acidity	**HIGH** - human health sensitive to natural disasters, vector borne and other diseases due to warmer climate, contaminated water, poor nutrition due to compromised crops and fisheries.	**LOW** - Can address challenges through priority projects under the JSAP but costly. National Climate Change and Health Action Plan endorsed. Access to outer-islands is particularly challenging given regular rough weather, large distances between islands and undeveloped inter-island transportation.	**HIGH** - although project priorities have been identified, they are yet to be endorsed. Despite some favourable projected climate impacts, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging, especially given the land ownership issues in Chuuk and its remote and dispersed islands.
Infrastructure	Droughts, typhoons, tropical storms, stormwaves, flooding, landslides, high sea surges in outer-islands, human-induced vulnerabilities.	Increase in air and sea temperature More often extreme rainfall days Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Increased ocean acidity Rise in sea levels up to 60cm by 2070	**HIGH**- Infrastructure sensitive to natural disasters and rise in sea levels, poor sanitation services especially for outer-islands, lack of roads as well as inter-island transport.	**LOW** - Can address challenges through priority projects under the JSAP and IDP but costly. 10-year IDP endorsed. Continuing issues around land ownership makes addressing challenges particularly difficult.	**HIGH** - although project priorities have been identified, they are yet to be endorsed. Despite some favourable projected climate impacts, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging, especially given the land ownership issues in Chuuk and its remote and dispersed islands.
Fisheries, coastal ecosystem and biodiversity	Droughts, typhoons, tropical storms, stormwaves, flooding, landslides, high sea surges in outer-islands, human-induced vulnerabilities.	Increase in air and sea temperature (up to 3.5 degrees celsius). Rise in sea levels up p 60cm by 2070 Increased ocean acidity	**HIGH** - coastal eco system health sensitive to rising sea levels, ocean acidification and human-induced vulnerabilities.	**MED** - Can address challenges through priority projects under the JSAP but costly. Current efforts already underway under the "Ridge to Reef" project focusing on protected areas management, the Micronesia Challenge FSM program, and under the TNC Adaptation projects.	**HIGH** - although project priorities have been identified, they are yet to be endorsed. Despite some favourable projected climate impacts, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging, especially given the land ownership issues in Chuuk and its remote and dispersed islands.

CHUUK STATE -cont.	*PLAN YET TO BE ENDORSED		Vulnerability Assessment		
Planning Area*	**Current and Expected Stresses**	**Projected Climate Change Impacts**	**Sensitivity [Ideal: LOW]**	**Adaptive Capacity [Ideal: HIGH]**	**Vulnerability [Ideal: LOW]**
Private Sector	Droughts, typhoons, tropical storms, stormwaves, flooding, landslides, high sea surges in outer-islands, human-induced vulnerabilities.	Increase in air and sea temperature (up to 3.5 degrees celsius). Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Rise in sea levels up p 60cm by 2070 Increased ocean acidity	**HIGH** - private sector sensitive to natural disasters and climate-induced changes to the natural ecosystem, especially marine.	**LOW** - Can address challenges through priority projects under the JSAP but costly. Current efforts already underway. However, challenges include: transportation barriers; low industry capacity; low quality products and services; inadequate infrastructure; lack of promotion; depreciating attractions; minimal level of investment by private sector and low support from public.	**HIGH** - although project priorities have been identified, they are yet to be endorsed. Despite some favourable projected climate impacts, institutional efficacy to secure funds and implement adaptation and mitigation projects are slow and challenging, especially given the land ownership issues in Chuuk and its remote and dispersed islands.

Annex 3: Past and Ongoing Adaptation Initiatives in the FSM

The following list was produced by the Pacific Community in 2012, used in the FSM Second National Communication to the UNFCCC document and should be cross-referenced with the latest available Joint Risk Management Network Stakeholders List, managed by the Office of Environment and Emergency Management.

Title and Timeframe	Description, country focus and agencies responsible
Micronesia Challenge (MC) *2006–ongoing*	Sub-regional conservation initiative, which enhances community resiliency by using traditional knowledge and ecosystem strategies to conserve vulnerable coastal land resources by 2020; goals are to effectively conserve at least 30% of nearshore resources and 20% of terrestrial resources. The MC includes: Micronesians in Island Conservation Network; Pacific Islands Managed and Protected Area Community; Locally Managed Marine Area Network – Micronesia Node; Micronesia Challenge Young Champions **Agencies responsible:** Micronesia Chief Executives (Guam, Mariana Islands, FSM, Palau and RMI); The Nature Conservancy; National Oceanic and Atmospheric Administration, Micronesia Conservation Trust, FSM Department of Resources & Development (R&D)
Micronesia Conservation Trust (MCT) *2002–ongoing*	MCT was formally established by The Nature Conservancy in 2002 as a charitable and irrevocable corporation organised to manage and provide funds for the accomplishment of the following mission: 'to support biodiversity conservation and related sustainable development for the people of Micronesia by providing long term sustained funding'. In 2006, MCT was selected as the financial mechanism for the Micronesia Challenge and has since fully regionalised its board and organisational structure and services. MCT is administered under FSM law, has a board of trustees.
Pacific Adaptation to Climate Change Project (PACC) *2009–2013*	The PACC Project is designed to promote climate change adaptation as a key pre-requisite to sustainable development in Pacific Island countries. Its objective is to enhance the capacity of the participating countries to adapt to climate change and climate variability, in key development sectors. Mainstreaming, demonstration and communications are implemented at the community and country levels. Kosrae was chosen as the pilot State, focusing on coastal infrastructure, e.g. roads that are already experiencing erosion from sea-level rise and flooding. **Agencies responsible:** UNDP (implementing agency); Global Environment Facility (GEF), AusAID (funding agencies); Secretariat of the Pacific Regional Environment Programme (SPREP) (implementing partner). FSM Kosrae Island Resource Management Authority (KIRMA)
Pacific - Australia Climate Change Science and Adaptation Planning Program (PACCSAP) *2011–2013*	PACCSAP: supporting the Government of FSM develop improved climate change projections and adaptation planning activities. 2012–2013. FSM and 14 other Pacific countries are part of this AUD 32 million project, which builds on the foundation of the Pacific Climate Change Science Programme and the Pacific Adaptation Strategy Assistance Programme. **Agencies responsible:** AusAID; Australian Department of Climate Change and Energy Efficiency; Australian Bureau of Meteorology, Commonwealth Scientific and Industrial Research Organisation. FSM OEEM
Implementing Sustainable Water Resources and Wastewater Management in Pacific Island Countries (Pacific IWRM)	Pacific IWRM is developing 'Ridge to Reef – Community to Catchment' integrated water resource management activities in the 14 participating Pacific Island countries. **Agencies responsible:** Global Environment Facility; SPC Applied Geosciences and Technology Division FSM R&D
$MAPCO_2$ Project *2011 – ongoing*	A $MAPCO_2$ was deployed within the Chuuk Lagoon in November 2011. The goal of this joint effort is to establish a long term monitoring station in Micronesia as part of global ocean monitoring network system for coral reef areas. **Agencies responsible:** National Oceanic and Atmospheric Administration Carbon Group; Korea Ocean Research and Development Institute. FSM R&D

Title and Timeframe	Description, country focus and agencies responsible
Global Climate Change Alliance: Pacific Small Island States (GCCA:PSIS) *2011–2014*	The overall objective of the GCCA: PSIS is to support the Governments of nine small Pacific Island States, including FSM, in their efforts to tackle the adverse effects of climate change. Overall available funding is €11 m. **Agencies responsible:** European Union (EU); SPC (Implementation); SPREP. FSM OEEM
University of the South Pacific USP-EU GCCA Project *2011–2014*	The USP-EU GCCA project addresses the challenges of climate change impacts in the 15 Pacific ACP countries, including FSM, through capacity building, community engagement, and applied research. The objective of this project is to develop and strengthen the Pacific ACP countries' capacity to adapt to the impacts of climate change. Overall available funding is € 8 m. **Agencies responsible:** European Union; University of the South Pacific.FSM- MFA?
North Pacific ACP Renewable Energy and Energy Efficiency Project (North-REP) *2010–2014*	The overall objective of North-REP is to improve the quality of life on the outer islands by increasing access to basic electricity and reducing dependency on fossil fuels through energy efficiency and increased penetration of matured renewable energy technologies in the North-REP countries (FSM, RMI and Palau). Overall available funding for FSM is US$ 10 m. **Agencies responsible:** European Union; SPC (implementing agency); FSM R&D.
Coping with Climate Change in the Pacific Island Region (CCCPIR) *2009–2015*	CCCPIR covers 12 Pacific Island countries and six components ranging from regional and National mainstreaming of climate change, implementation of adaptation activities on the ground, and climate change related to tourism, energy and education. Overall available funding is € 17 m. The share for FSM amounts to US$ 440,000. **Agencies responsible:** German Ministry for Economic Cooperation and Development (BMZ, funding); German International Cooperation (GIZ, implementing agency); SPC (regional partner), FSM OEEM, R&D
Unite for Climate	Children's vulnerability to climate change and disaster impacts in East Asia and the Pacific. **Agency responsible:** UNICEF, FSM Department of Health and Social Affairs, Red Cross
ADAPT Asia – Pacific Annual USAID Forum on Adaptation *2012 onwards*	Designed to help Asia-Pacific country Governments understand the technical and scientific demands required to apply for climate finance **Agency responsible:** USAID, FSM OEEM
National Climate Change and Health Action Plan	Regional framework for action to protect human health from effects of climate change in the South East Asia and Pacific region. **Agencies responsible:** World Health Organization, FSM – Department of Health and Social Affairs, State Environment Protection Agencies, OEEM,
Technical Assistance(TA) to the Federated States of Micronesia for Strengthening Infrastructure Planning and Implementation *2011–2013*	TA will support State utilities within FSM in executing infrastructure projects more effectively by having an agreed upon approach to systems and procedures for project planning, design, and management across the country; and build capacity in the Department of Transportation, Communications and Infrastructure to plan, design, and oversee project execution. The Government of FSM has requested ADB to finance US$ 700,000 equivalent. **Agencies responsible:** ADB, Japan Fund for Poverty Reduction, FSM TC&I
Pacific Islands Climate Education Partnership (PCEP) *2011–ongoing*	Educates students and citizens across the Pacific about the urgency of climate change impacts in ways that exemplify modern science and honour indigenous cultures and environmental knowledge. This project, funded by the National Science Foundation (NSF), serves the United States-affiliated Pacific Islands. **Agencies responsible:** US National Science Foundation (NSF); WestEd. FSM OEEM, National and State Departments of Education

Title and Timeframe	Description, country focus and agencies responsible
Climate Adaptation, Disaster Risk Reduction and Education (CADRE) *2011 -2014*	Aims to build resilience of vulnerable communities to natural hazards particularly those that are climate induced. Will target approximately 10,000 school aged students at up to 50 schools with climate adaptation, disaster risk reduction and education program. Track 1 educational component, including capacity building of students, teachers, administrators and the local community; technical assessments of climate change impact and disaster risk on schools grounds, and the surrounding community. Track 2 roll out of adaptation measures stemming from the recommendations contained within the change impact assessments and exercising of the climate adaptation and disaster risk management plans **Agencies responsible:** AusAID, IOM, FSM OEEM, National and State Departments of Education

Annex 4: UNDP-GEF Biodiversity Portfolio in the FSM

Source: Federated States of Micronesia (2015), *Implementing an integrated "Ridge to Reef" approach to enhance ecosystem services, to conserve globally important biodiversity and to sustain local livelihoods in the FSM,* ProDoc for the United Nations Development Program Global Environmental Facility-5 United Nations Environmental Program, pages 104-5.

- The Ridge to Reef (R2R) project for the FSM (GEF5) will support protected areas management, expansion as well as effective biodiversity conservation and environmental management in the broader landscape. The R2R gives effect to the biodiversity conservation and environmental management principles identified in the NBSAP. Further, the baseline and monitoring information collected through the R2R project will provide the baseline input data into future revisions of the NBSAP.

- Pacific Islands Oceanic Fisheries Management Project: The aim of this recently completed project was to support Pacific SIDs' efforts to reform, realign, restructure and strengthen their national fisheries laws, policies, institutions and programmes.

- Implementation of Global and Regional Oceanic Fisheries Conventions and Related Instruments in the Pacific Small Island Developing States (GEF #4746): The aim of this recently approved project is to support Pacific SIDS in meeting their obligations to implement and effectively enforce global, regional and sub-regional arrangements for the conservation and management of transboundary oceanic fisheries thereby increasing sustainable benefits derived from these fisheries. This will be particularly important when addressing Aichi Targets 6 and 7.

- Pacific Adaptation to Climate Change Project (GEF #3101): The aim of this project, which is under implementation, is to implement long-term adaptation measures to increase the resilience of a number of key development sectors in the Pacific islands to the impacts of climate change. This will be particularly important when addressing Target 15.

- The Micronesia Challenge: Sustainable Finance Systems for Island Protected Area Management - under the GEF Pacific Alliance for Sustainability (GEF # 3626): The aim of this project is to develop a national incentive program for mainstreaming sustainable land management planning and practices in order to combat land degradation, conserve biodiversity of global importance and protect vital carbon assets. This will be particularly important when addressing Targets 2 and 3.

Annex 5: GCF Results Framework and Investment Criteria

GCF Results Framework:

GCF Investment Criteria

Criteria	Definitions
Impact/results potential	Potential to contribute to the objectives and results areas of the GCF
Paradigm shift potential	Systemic change to low-carbon and climate-resilient pathways Post-investment sustainability of the project
Needs of beneficiary country	Financing needs, lack of alternative funding sources
Country ownership	Beneficiary country ownership and capacity to implement the project
Efficiency and effectiveness	Cost–benefit analysis
Sustainable development impact	Gender, jobs and other benefits

Annex 6: Acknowledgments

The preparation of this report has been accompanied by communications with the States delegation to the FSM-GCF Inception Workshop (Nov 21 to 24, 2016) and key FSM government officials including: Hon. Sihna Lawrence, Secretary of Finance and Administration; Eugene Amor, Assistant Secretary Budget and Planning, Department of Finance and Administration; Rob Solomon, Economic Advisor, Department of Finance and Administration; Andrew Yatilman, Director, Office of Environment and Emergency Management; Cindy Ehmes, Assistant Director, Environmental and Sustainable Development, Office of Environment and Emergency Management; Elina Paul, Assistant Director, Emergency Division, Office of Environment and Emergency Management; Hon. Secretary Marion, Secretary, Department of Resources and Development; Alissa Takesy, Assistant Secretary, Department of Resources and Development; Hon. Lukner Wielbacher, Secretary, Department of Transport, Communication and Infrastructure; Dickson Wichep, Assistant Secretary, Department of Transport, Communication and Infrastructure; MaoPeng, Project Management Unit, Department of Transport, Communication and Infrastructure; Kemsky Sigrah, Compact Management Office; Gillian Doone, Overseas Development Assistance Office; Norleen Oliver, National Gender Officer, Department of Health and Social Affairs; Moses Pretrick, Environmental Health Coordinator, Department of Health and Social Affairs Lucas Cupps, Staff Attorney, FSM Congress; Minh Nguyen, Assistant Attorney General, Department of Justice; David Johnson, Staff Attorney, FSM Supreme Court.

Particular thanks to colleagues under the FSM-GCF Readiness program, Kensley Ikosia (Climate Finance Advisor) and Belinda Hadley (National Consultant) for raising questions, correcting errors and clarifying phrasing. Their contribution has greatly improved the quality of the text. Any remaining errors and omissions are the sole responsibility of the author. The views presented in this report do not necessarily reflect the views of the officials listed here, and are equally the sole responsibility of the author.