



**GREEN
CLIMATE
FUND**

Meeting of the Board

16 – 19 March 2021

Virtual meeting

Provisional agenda item 14

GCF/B.28/02/Add.12

23 February 2021

Consideration of funding proposals - Addendum XII

Funding proposal package for SAP020

Summary

This addendum contains the following six parts:

- a) A funding proposal titled "Climate resilient food security for farming households across the Federated States of Micronesia (FSM)";
- b) No-objection letter issued by the national designated authority(ies) or focal point(s);
- c) Secretariat's assessment;
- d) Independent Technical Advisory Panel's assessment;
- e) Response from the accredited entity to the independent Technical Advisory Panel's assessment; and
- f) Gender documentation.

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Simplified Approval Process Funding Proposal

Project/Programme title: Climate resilient food security for farming households across the Federated States of Micronesia (FSM)

Country(ies): Federated States of Micronesia (FSM)

National Designated Authority(ies): FSM Department of Finance and Administration

Accredited Entity: Micronesia Conservation Trust (MCT)

Date of first submission: [2019/11/08]

Date of current submission/
version number [2020/12/10] [V.05]

If available, indicate GCF code: *This code is assigned to each project upon first submission of a Concept Note or Funding Proposal and remains the same throughout the proposal review process. If you have submitted this project/programme previously please indicate the GCF code here.*



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Contents

Section A **PROJECT / PROGRAMME SUMMARY**

This section highlights some of the project's or programme's information for ease of access and concise explanation of the funding proposal.

Section B **PROJECT / PROGRAMME DETAILS**

This section focuses on describing the context of the project/programme, providing details of the project/programme including components, outputs and activities, and implementation arrangements.

Section C **FINANCING INFORMATION**

This section explains the financial instrument(s) and amount of funding requested from the GCF as well as co-financing leveraged for the project/programme. It also includes justification for requesting GCF funding and exit strategy.

Section D **LOGIC FRAMEWORK, AND MONITORING, REPORTING AND EVALUATION**

This section includes the logic framework for the project/programme in accordance with the GCF Results Management Framework and Performance Measurement Framework, and gives an overview of the monitoring, reporting and evaluation arrangements for the proposed project/programme.

Section E **EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA**

This section provides an overview of the expected alignment of the projects/programme with the GCF investment criteria: impact potential, paradigm shift, sustainable development, needs of recipients, country ownership, and efficiency and effectiveness.

Section F **ANNEXES**

This section provides a list of mandatory documents that should be submitted with the funding proposal as well as optional documents and references as deemed necessary to supplement the information provided in the funding proposal.

Note to accredited entities on the use of the SAP funding proposal template

- The Simplified Approval Process Pilot Scheme (SAP) supports projects and programmes with a GCF contribution of up to USD 10 million with minimal to no environmental and social risks. Projects and programmes are eligible for SAP if they are ready for scaling up and have the potential for transformation, promoting a paradigm shift to low-emission and climate-resilient development.
- This template is for the SAP funding proposals and is different from the funding proposal template under the standard project and programme cycle. Distinctive features of the SAP funding proposal template are:
 - *Simpler documents*: key documents have been simplified, and presented in a single, up-front list;
 - *Fewer pages*: A shorter form with significantly fewer pages. The total length of funding proposals should **not exceed 20 pages**, annexes can be used to provide details as necessary;
 - *Easier form-filling*: fewer questions and clearer guidance allows more concise and succinct responses for each sub-section, avoiding duplication of information.
- Accredited entities can either directly incorporate information into this proposal, or provide summary information in the proposal with cross-reference to other funding proposal documents such as project appraisal document, pre-feasibility studies, term sheet, legal due diligence report, etc.
- Submitted SAP Pilot Scheme funding proposals will be disclosed simultaneously with submission to the Board, subject to the redaction of any information which may not be disclosed pursuant to the [GCF Information Disclosure Policy](#).

Please submit the completed form to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:

“SAP-FP-[Accredited Entity Short Name]-[yyymmdd]”

A. PROJECT/PROGRAMME SUMMARY					
A.1. Has this FP been submitted as a SAP CN before?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
A.2. Is the Environmental and Social Safeguards Category C or I-3?			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
A.3. Project or programme	Indicate whether this FP refers to a combination of several projects (programme) or one project. <input checked="" type="checkbox"/> Project <input type="checkbox"/> Programme	A.4. Public or private sector	<input checked="" type="checkbox"/> Public sector <input type="checkbox"/> Private sector	A.5. RFP	Choose an item.
A.6. Result area(s)	<p>Check the applicable GCF result area(s) that the proposed project/programme targets. Indicate for each checked result area(s) the estimated%age of GCF budget devoted to it. The summed up%age should be equal to 100%.</p> <p>Mitigation: Reduced emissions from:</p> <p><input type="checkbox"/> Energy access and power generation: <u>Enter number</u> %</p> <p><input type="checkbox"/> Low emission transport: <u>Enter number</u> %</p> <p><input type="checkbox"/> Buildings, cities and industries and appliances: <u>Enter number</u> %</p> <p><input type="checkbox"/> Forestry and land use: <u>Enter number</u> %</p> <p>Adaptation: Increased resilience of:</p> <p><input checked="" type="checkbox"/> Most vulnerable people and communities: <u>45</u> %</p> <p><input checked="" type="checkbox"/> Health and well-being, and food and water security: <u>55</u> %</p> <p><input type="checkbox"/> Infrastructure and built environment: <u>Enter number</u> %</p> <p><input type="checkbox"/> Ecosystem and ecosystem services: <u>Enter number</u> %</p>				
A.a. ¹ Total investment (GCF + co-finance)	Amount: 9,393,350USD	A.a.1 Total GCF funding requested	Amount: 8,583,350USD		
A.b. Type of financial instrument requested for the GCF funding	<p>Mark all that apply.</p> <p><input checked="" type="checkbox"/> Grant <input type="checkbox"/> Loan² <input type="checkbox"/> Equity <input type="checkbox"/> Guarantees <input type="checkbox"/> Others:</p>				
A.7. Implementation period	January 15 (Quarter 1), 2022				
A.8. Total project/programme lifespan	5 years	A.9. Expected date of internal approval	4/1/2021		
A.10. Executing Entity information	Federated State of Micronesia (FSM) national government acting through the Department of Resources and Development (R&D) and the Department of Environment, Climate Change and Emergency Management (DECCEM); and the College of Micronesia-FSM (COM-FSM)				
A.11. Scalability and potential for transformation (Eligibility for SAP, max. 100 words)					
<p>The project supports a shifting pathway for FSM by Promoting Resilient Agriculture through climate-resilient interventions to reduce the shock of a changing climate on agricultural productivity. The resilient agriculture interventions will directly respond to key regional, national and local climate hazards and the specific risks they pose to agricultural production, while building more resilient communities. Past attempts at one-off pilot projects have failed to provide a system-wide solution to increasing the resilience of FSMs most vulnerable communities to food insecurity in the face of climate change. The opportunity provided through GCF support can create clear demonstrable success of a 'whole of system' approach to addressing climate risks as they relate to food security across FSM. The urgency for such a project has become even more apparent with the recent COVID-19 pandemic³ and will significantly help</p>					

¹ This fields will be automatically calculated in the OSS system.

² Senior loans and subordinated loans.

³ The ongoing global pandemic is projected to have consequences for the FSM economy over the coming years.

Construction, transportation and communications and the tourism sectors are estimated to shrink for at least the next fiscal

FSM with its green investment plans to revive its economy toward a low emissions and climate resilient pathway. As an island State, FSM's population is even more acutely affected by reductions in imports and the need to rely on domestic supply. While still uncertain in its magnitude, the economic downturn that is expected at the global level will trickle down to developing countries like FSM and exacerbate the existing climate change induced food insecurity. As the WHO has suggested, increases and changes to infectious disease transmission patterns are likely a major consequence of climate change.⁴ To better prepare for any future pandemics, FSM must ensure its locally sourced food system is more robust. Overall, the project is expected to become the critical foundation for sustained efforts on food security as part of the national response to climate change.

A.12. Project/Programme rationale, objectives and approach (max. 300 words)

With an Environmental Vulnerability Index score of 392, the Federated States of Micronesia (FSM) is currently one of the most highly vulnerable Small Island Developing States (SIDS) in the Pacific. If no corrective action is taken, projected impacts from climate change over the next few decades include rising sea levels, increased temperature, increased rainfall, increased tidal surges, ocean acidification, as well as increased severity of extreme events like tidal surges, rainfall and storm events, and extreme heat, could severely threaten food security of FSM communities mostly through crop loss, loss of arable land, price/supply shocks, and forced migration of outlying communities.

Several one-off projects in select FSM States as well as in the Pacific region have been undertaken over the years to address food and water insecurity. There has not however been a holistic integrated approach targeting the effects of climate change on food security at a national-scale. As many of the projected impacts to climate change are now unavoidable, implementing some degree of adaptation is essential to enhance food security, strengthen livelihoods, and increase the resilience of FSM communities to future climate risks.

The proposed project would be the **first comprehensive national effort** to focus on increasing the resilience of FSM's most vulnerable communities to food insecurity in the face of climate change. The proposal will target all households in the FSM high islands undertaking some form of farming approximately 68,250 direct beneficiaries (across the Federated States of Micronesia (FSM) with 63% of HHs conducting some form of agriculture and forestry). The proposed project will work to:

1. Establish an enabling environment for adaptive action and investment including strengthening the evidence base for adaptation, mainstreaming climate risk into development planning, and disseminating actionable climate information to community and State decision makers. This would include integrating potential infectious diseases, whose spread and reach is exacerbated by climate change.
2. Enhance the food security of vulnerable households by introducing climate-smart agriculture (CSA) practices.
3. Strengthen climate-resilient value-chains and market linkages across the agriculture sector.

year. Overall GDP is expected to decline by approximately 5% over fiscal year 2020 and 2% over fiscal year 2021. All of this affects expenditures for the agriculture sector which directly impacts food security. Assessing the Impact of COVID-19 on the Federated States of Micronesia Economy; Available at: https://pitiviti.org/news/wp-content/uploads/downloads/2020/06/FSM_EconImpact_COVID-19_June2020_Web.pdf

⁴ WHO Climate Change and Human Health; Available at: <https://www.who.int/globalchange/climate/summary/en/index5.html>

B. PROJECT/PROGRAMME DETAILS

B.1. Context and baseline (max. 500 words)

Food Security Baseline

FSM strategy and long-term development is to enhance the resilience of the agriculture sector to provide in supporting food security in the FSM (Agriculture Policy 2011). In addressing food security within the context of this proposal, the agriculture sector is a main method of focus. A separate FAO vulnerability assessment report highlights that all States are vulnerable to climate change impacts in the agriculture and fisheries sector as they are exposed to a number of climate related stressors and are sensitive to these stressors and projected climate impacts.

For the purposes of this particular project, agriculture is the main focus for improving food security. In 2013/2014, 63% of FSM households reported conducting some form of agricultural activity⁵ and 43% of the labor force conducted agriculture as a primary or secondary activity with agriculture contributing 14% to overall household income. Nearly 40% of households produced goods purely for subsistence and only 24% of FSM households sold any part of their agriculture production. Agricultural engagement varies across the States. In Yap 90% of households engaged in agricultural activities, but only 28% have sold any of their production. In Pohnpei 69% of households engaged in agriculture, and a relatively large proportion of households (36%) have sold some of their production. In Chuuk and Kosrae agricultural engagement is lower (50% and 59% respectively), as is the percentage of households that have sold their production (12% and 20%, respectively).⁶

The Integrated Agriculture Census Report (2020)⁷ indicates that approximately 40% of the land in FSM is used for agricultural purposes (10% Kosrae, 40% Pohnpei, 70% Chuuk, 47% Yap) and over 90% of FSM households have access to land that can be used for agriculture. Much of the land is used for agroforestry⁸ and tree crops, with 70% of household operated (not shared) parcels and 80% of shared parcels of land mainly under tree crops or agroforestry. The primary crops grown are coconut, breadfruit and banana (about 90% of households). Additionally, about 36% of households grow root crops like yams, while only 17% of households grow vegetable crops like peppers.

Over 74% of households indicated the main use of crops grown was for self-consumption. The extent of subsistence activity in agriculture is clear, with 92% of those working in agricultural occupations being unpaid. For crops that were sold, over 40% of the households that grew certain crops (sakau, cucumber, betelnut, swamp taro, coconut, and breadfruit) were selling at least a portion of their yields. Across all crops and States the largest number of sales reported were directly to the consumer (38%) closely followed by sales to a public market (35%). Sales to a local shop were also significant at 19%, but sales to a restaurant or hotel were low at 2%, less than sales reported to others at 6%. Across FSM, over 50 % of households with land for agriculture reported that they received no income from agriculture. In Yap, nearly 70 % reported no income from agriculture while in Pohnpei less than 40% reported receiving no income from agriculture.⁹

⁵ Traditional agriculture in FSM can be classified into the following categories based on their methods of cultivation and land use: a) mixed tree gardens, agroforests, or arboriculture, b) shifting cultivation (intermittent gardens, swiddens in forest or bush, including slash and burn systems), c) intensive open field agriculture in fern and grass savannas, including ditching for drainage, d) wetland taro systems for *Cyrtosperma chamissonis* and *Colocasia esculenta*, e) kitchen or backyard gardens, and f) animal husbandry.

⁶ Household Income and Employment Survey 2013/2014 Agriculture Factsheet; Available at: <https://pafpnet.spc.int/attachments/article/806/FSM%20Agriculture%20fact%20sheet%20Final.pdf>

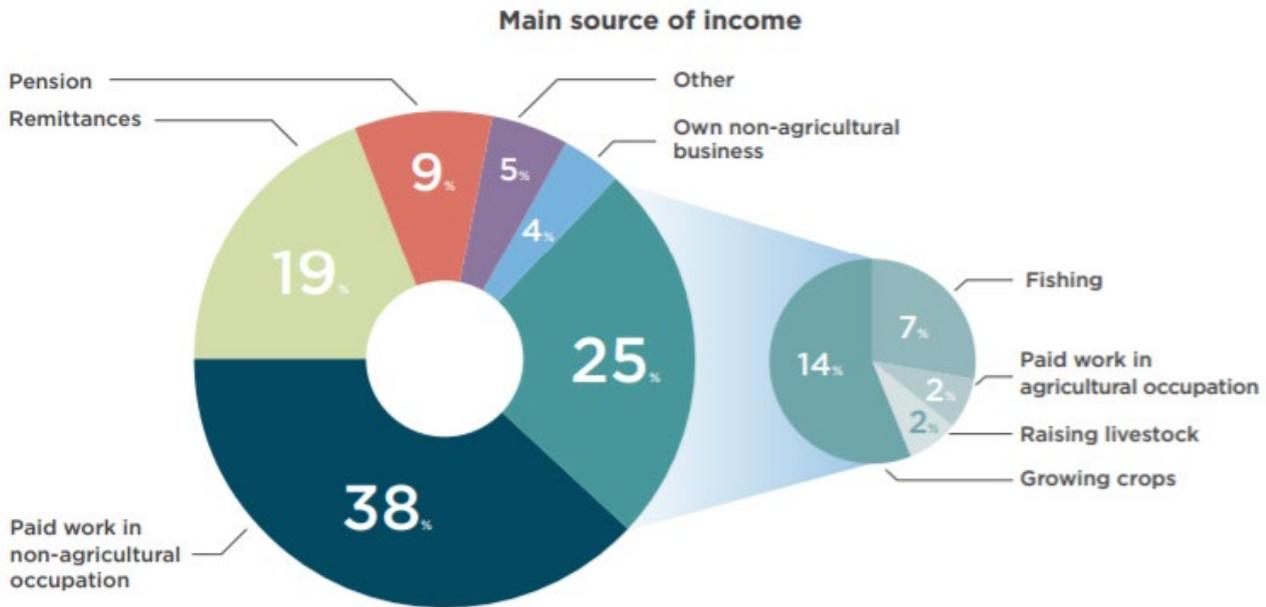
⁷ FSM Integrated Agriculture Census 2016 (2020); Available at: http://www.fsmrd.fm/wp-content/uploads/2020/06/200120_FSM_IAC_2016.pdf

⁸ In high islands agroforestry consists of a permanent over-story of tree crops, forest trees, fruit and multipurpose trees. The understory consists of shrubs, root crops, and herbaceous plants. Agroforestry strategies include integration of native trees, fruit trees, coconuts, and nitrogen fixing trees with taro, yaqona and vegetables, development of community woodlots to improve ecological resilience in terms of watershed function and avoiding reduced fallow periods or repeated cropping of high-value crops on the same land, especially without rotations or sufficient replenishment of soil nutrients.

⁹ FSM Integrated Agriculture Census 2016 (2020); Available at: http://www.fsmrd.fm/wp-content/uploads/2020/06/200120_FSM_IAC_2016.pdf

GRAPH 9.1

Main sources of cash income for all households: 2016



Source: FSM 2016 Integrated Agriculture Census

FSM Agriculture Census: Main Sources of Cash Income

Under half (48%) of the households with land for agriculture reported engagement in markets for purchasing their produce. 30% of farm households lived less than an hour from a market, but for 2.5% of households there was no market accessible or available. Around 9% of households with land for agriculture reported participating in product organizations in the past year. This was consistent across the States with participation by 10% of farm households in Yap, 8% in Chuuk, 9% in Pohnpei and 11% in Kosrae. Agriculture extension services had visited 19% of households in the census year, half of them twice. Chuuk had the highest proportion of households reporting visits from an extension officer with 14% reporting one visit and 11% reporting two or more visits. However, the main sources of information about agriculture were the radio (31%), other farmers (24%), or agriculture extension services (13%).¹⁰

Most households reported using only basic tools. Machetes were reported by 97% of households with land for agriculture, and shovels were reported by 91%. Nearly all of those using these tools owned their own tools. The next most commonly used equipment were wheelbarrows, weed eaters (line trimmers) and chainsaws (10-52% of households across States).¹¹

FSM has a complex system of traditional ownership that dates back centuries. Many parcels of land are held by families or clans that may have different factions, all of whom assert interest in the land. This complicates both the use of the land and the recording of tenure and use of the land. Most land used for agriculture was reported to be freehold land or held with customary titles. About 8% of the land parcels used for agriculture were leased or had other tenure. In Yap, 79% of single household operated parcels and 84% of shared parcels in customary tenure. In Yap only 15% of single household operated parcels were freehold land, while all other States reported over 70% freehold for single household operated parcels. Shared land parcels are more likely to be in customary tenure in other States,

¹⁰ FSM Integrated Agriculture Census 2016 (2020); Available at: http://www.fsmrd.fm/wp-content/uploads/2020/06/200120_FSM_IAC_2016.pdf

¹¹ FSM Integrated Agriculture Census 2016 (2020); Available at: http://www.fsmrd.fm/wp-content/uploads/2020/06/200120_FSM_IAC_2016.pdf

with 49% of shared parcels in customary ownership in Kosrae, 37% of shared parcels in customary ownership in Chuuk and 20% of shared parcels in customary ownership in Pohnpei.¹²

In 2013/2014, meeting essential caloric needs in FSM required an average of \$US 1.84 per adult per day; meeting both food and non-food basic needs required on average \$US 4.34 per day. At the national level, about 10% of people in FSM are below the food poverty line and 41% are below the total poverty line. Chuuk has the highest proportion of people below the food poverty line (16%), followed by Yap (10%), Pohnpei (2.6%), and Kosrae (<.1%). Across the four States, food expenditures make up significant portions of household spending ranging from 32-76% depending on income.¹³ The Second National Communication on Climate Change highlighted that imported food constitutes 17-43% of the households' diets in FSM with convenience starch foods, including rice, ramen, noodles, flour and bread the principal food imports reflecting a change in diets away from traditional staples.¹⁴

This already constrained situation for food security in FSM is expected to be further hampered by climate change.

Air Temperature and Rainfall

Annual and seasonal maximum temperatures have increased in Pohnpei and Yap since 1951. Maximum temperatures have increased at a rate of 0.32°F (0.18°C) per decade at Pohnpei and at a rate of 0.41°F (0.23°C) per decade at Yap. Also, at Pohnpei, annual and half-year trends in maximum air temperature are greater than those observed in minimum air temperature. These temperature increases are consistent with the global pattern of warming.¹⁵ Annual rainfall in FSM has remained relatively constant with a slight decline across States with Yap declining an average of 0.31in (7.9mm) per decade, Pohnpei declining 3.46in (88mm) per decade, and Chuuk declining 1.93in (-48.9mm) per decade (1950 -2009).¹⁶

The incidence of drought is also expected to decrease over the 21st century (except during ENSO conditions as outlined below), consistent with an overall increase in rainfall for FSM. Recent projections suggest that:

Mild drought will occur approximately seven to eight times every 20 years by 2090 under the B1 (low) emissions scenario and six to seven times under the A1B (medium) and A2 (high) scenarios approximately eight to nine times every 20 years in 2030

Moderate drought will occur approximately once to twice every 20 years in 2030 once to twice every 20 years in 2090 and once every 20 years in 2090 for all emissions scenarios moderate drought will occur:

Severe drought will occur approximately once every 20 years across all time periods and scenarios.

Below are summary tables and charts for Pohnpei (East FSM) and Yap (West FSM). All tables are clipped from PACCSAP report.¹⁷

¹² FSM Integrated Agriculture Census 2016 (2020); Available at: http://www.fsmrd.fm/wp-content/uploads/2020/06/200120_FSM_IAC_2016.pdf

¹³ Household Income and Employment Survey 2013/2014 Agriculture Factsheet; Available at: <https://pafpnet.spc.int/attachments/article/806/FSM%20Agriculture%20fact%20sheet%20Final.pdf>

¹⁴ Federated States of Micronesia Second National Communication on Climate Change pg. 20; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communication-to-the-UNFCCC.pdf>

¹⁵ Federated States of Micronesia Second National Communication on Climate Change pg. 22; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communication-to-the-UNFCCC.pdf>

¹⁶ Federated States of Micronesia Second National Communication on Climate Change pg. 23-25; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communication-to-the-UNFCCC.pdf>

¹⁷ Pacific-Australia Climate Change Science and Adaptation Planning Program; Available at: https://www.pacificclimatechangescience.org/wp-content/uploads/2014/07/PACCSAP_CountryReports2014_WEB_140710.pdf

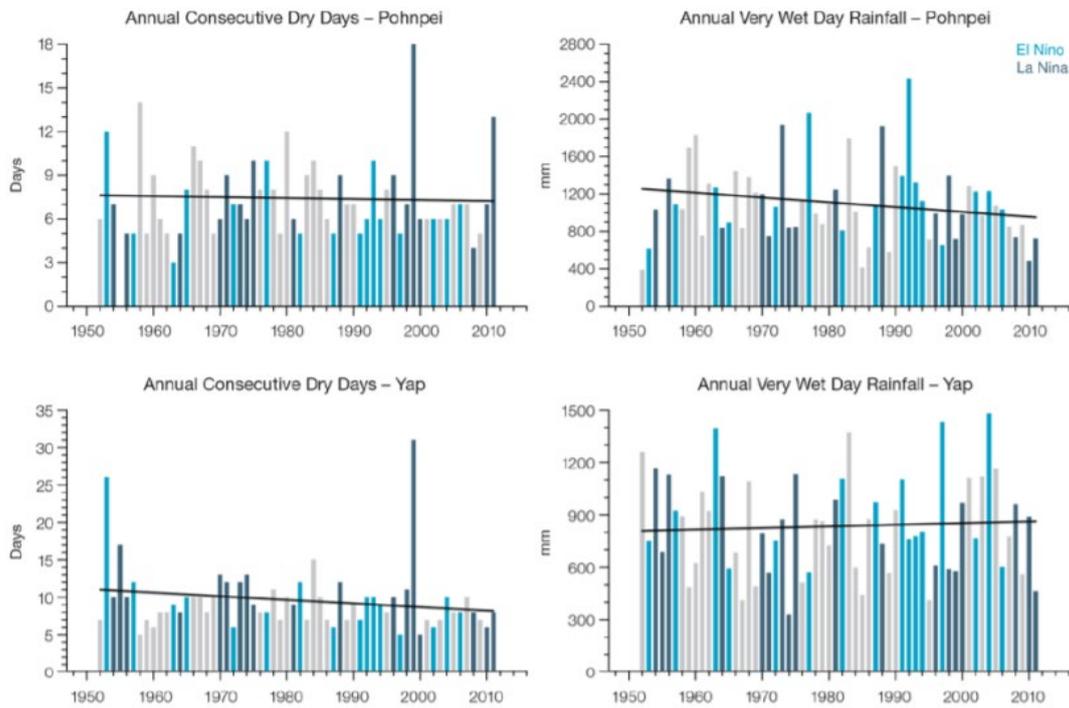


Figure 4.6: Observed time series of annual Consecutive Dry Days at Pohnpei (top left panel) and Yap (bottom left panel), and annual Very Wet Days at Pohnpei (top right panel) and Yap (bottom right panel). Solid black line indicates least squares fit.

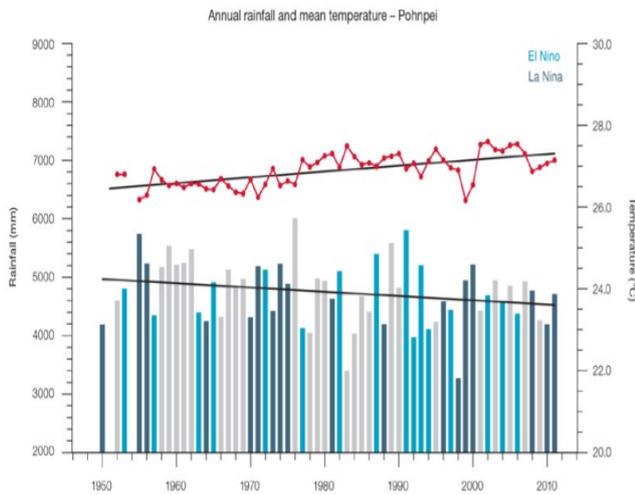


Figure 4.3: Observed time series of annual average values of mean air temperature (red dots and line) and total rainfall (bars) at Pohnpei. Light blue, dark blue and grey bars denote El Niño, La Niña and neutral years respectively. Solid black trend lines indicate a least squares fit.

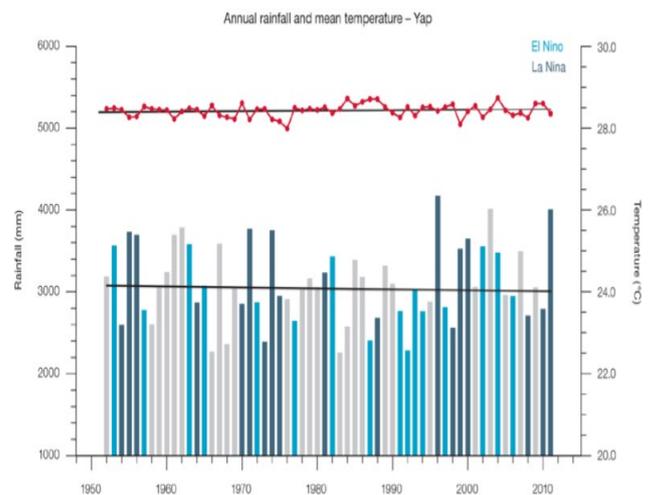


Figure 4.4: Observed time series of annual average values of mean air temperature (red dots and line) and total rainfall (bars) at Yap. Light blue, dark blue and grey bars denote El Niño, La Niña and neutral years respectively. Solid black trend lines indicate a least squares fit.

Table 4.2: Annual and half-year trends in air temperature (Tmax, Tmin, Tmean) and rainfall at Pohnpei (top) and Yap (bottom). The 95% confidence intervals are shown in parentheses. Values for trends significant at the 5% level are shown in boldface.

Pohnpei				
	Tmax °F/10yrs [°C/10yrs]	Tmin °F/10yrs [°C/10yrs] 1951–2011	Tmean °F/10yrs [°C/10yrs]	Total Rain inches/10yrs [mm/10yrs] 1950–2011
Annual	+0.32 (+0.19, +0.46) [+0.18] (+0.10, +0.26)]	+0.16 (-0.02, +0.35) [+0.09] (-0.01, +0.20)]	+0.27 (+0.12, +0.38) [+0.15] (+0.07, +0.21)]	-2.26 (-5.32, +0.61) [-57.3] (-135.1, +15.5)]
Nov–Apr	+0.31 (+0.17, +0.48) [+0.17] (+0.09, +0.27)]	+0.25 (+0.03, +0.42) [+0.14] (+0.02, +0.23)]	+0.29 (+0.11, +0.44) [+0.16] (+0.06, +0.25)]	-1.80 (-4.60, +1.64) [-45.8] (-116.7, +41.8)]
May–Oct	+0.32 (+0.16, +0.46) [+0.18] (+0.09, +0.26)]	+0.19 (+0.03, +0.37) [+0.11] (+0.02, +0.21)]	+0.27 (+0.13, +0.39) [+0.15] (+0.07, +0.22)]	-2.23 (-4.52, -0.12) [-56.6] (-114.9, -3.1)]

Yap				
	Tmax °F/10yrs [°C/10yrs]	Tmin °F/10yrs [°C/10yrs] 1951–2011	Tmean °F/10yrs [°C/10yrs]	Total Rain inches/10yrs [mm/10yrs] 1952–2011
Annual	+0.41 (+0.36, +0.48) [+0.23] (+0.20, +0.26)]	-0.36 (-0.43, -0.27) [-0.20] (-0.24, -0.15)]	+0.03 (-0.02, +0.07) [+0.01] (-0.01, +0.04)]	0.00 (-2.85, +3.22) [-0.1] (-72.5, +81.8)]
Nov–Apr	+0.39 (+0.34, +0.44) [+0.22] (+0.19, +0.25)]	-0.27 (-0.37, -0.18) [-0.15] (-0.21, -0.10)]	+0.04 (-0.02, +0.11) [+0.02] (-0.01, +0.06)]	+0.86 (-2.87, +1.44) [-21.9] (-72.8, +36.6)]
May–Oct	+0.44 (+0.37, +0.51) [+0.24] (+0.20, +0.28)]	-0.40 (-0.48, -0.33) [-0.22] (-0.27, +0.18)]	+0.01 (-0.04, +0.05) [0.00] (-0.02, +0.03)]	+0.93 (-1.27, +3.10) [+23.6] (-32.1, +78.8)]

Table 4.3: Annual trends in air temperature and rainfall extremes at Pohnpei (top) and Yap (bottom). The 95% confidence intervals are shown in parentheses. Values for trends significant at the 5% level are shown in boldface.

		Pohnpei 1952–2011	Yap 1952–2011
TEMPERATURE			
Warm Days (days/decade)		7.86 (+3.65, 11.70)	12.23 (+4.60, +19.80)
Warm Nights (days/decade)		5.12 (+1.22, +9.05)	-16.68 (-21.57, -10.24)
Cool Days (days/decade)		-3.98 (-5.53, -2.52)	-8.50 (-13.66, -2.67)
Cool Nights (days/decade)		-2.73 (-8.21, +3.68)	+8.70 (+3.71, +14.90)
RAINFALL			
Rain Days ≥ 1 mm	(days/decade)	-0.21 (-2.79, +2.48)	-1.01 (-4.20, +1.82)
Very Wet Day rainfall	(inches/decade)	-2.63 (-5.15, -0.12)	+0.22 (-1.39, +1.97)
	(mm/decade)	-66.88 (-130.81, -3.05)	+5.55 (-35.30, +49.95)
Consecutive Dry Days (days/decade)		0.00 (-0.43, +0.20)	-0.37 (-0.77, 0.00)
Max 1-day rainfall	(inches/decade)	-0.015 (-0.29, 0.27)	-0.04 (-0.30, +0.21)
	(mm/decade)	-0.38 (-7.29, +6.84)	-0.88 (-7.62, +5.41)

Warm Days: Number of days with maximum temperature greater than the 90th percentile for the base period 1971–2000

Warm Nights: Number of days with minimum temperature greater than the 90th percentile for the base period 1971–2000

Cool Days: Number of days with maximum temperature less than the 10th percentile for the base period 1971–2000

Cool Nights: Number of days with minimum temperature less than the 10th percentile for the base period 1971–2000

Rain Days ≥ 1mm: Annual count of days where rainfall is greater or equal to 1mm (0.039 inches)

Very Wet Day rainfall: Amount of rain in a year where daily rainfall is greater than the 95th percentile for the reference period 1971–2000

Consecutive Dry Days: Maximum number of consecutive days in a year with rainfall less than 1mm (0.039 inches)

Max 1-day rainfall: Annual maximum 1-day rainfall

FSM PACCSAP Historical Rainfall and Temperature

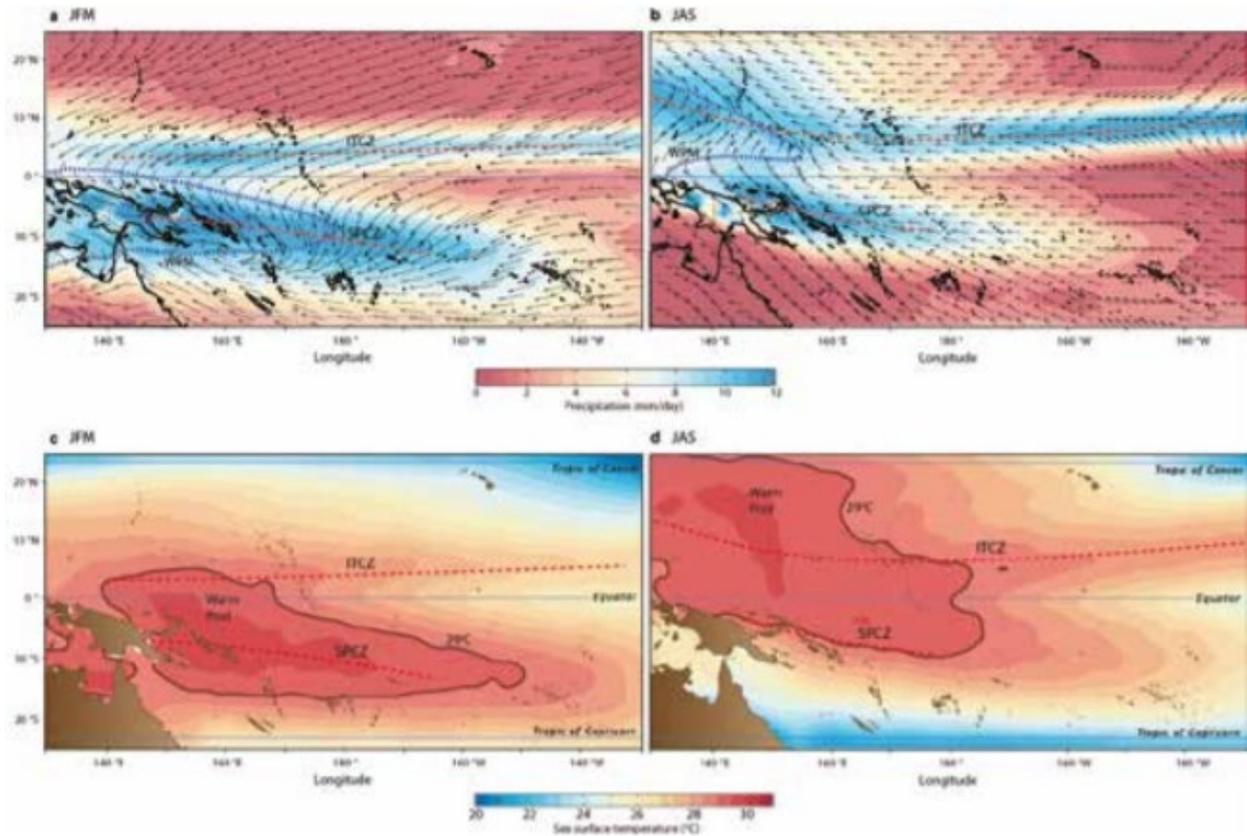


Figure 2.4 Average, 1979–2012, (a, b) rainfall and surface winds and c, d) SST for January to March (left) and June to September (right). Also shown are average locations of the ITCZ and SPCZ (red dashed line, a–d); the region affected by the WPM (defined as region of seasonal westerly winds, blue dashed line, a–b), and the edge of the WPWP (defined by 29°C isotherm, grey line, c–d) (source: surface winds and rainfall from ERA interim; HadISST, Rayner et al. 2003).

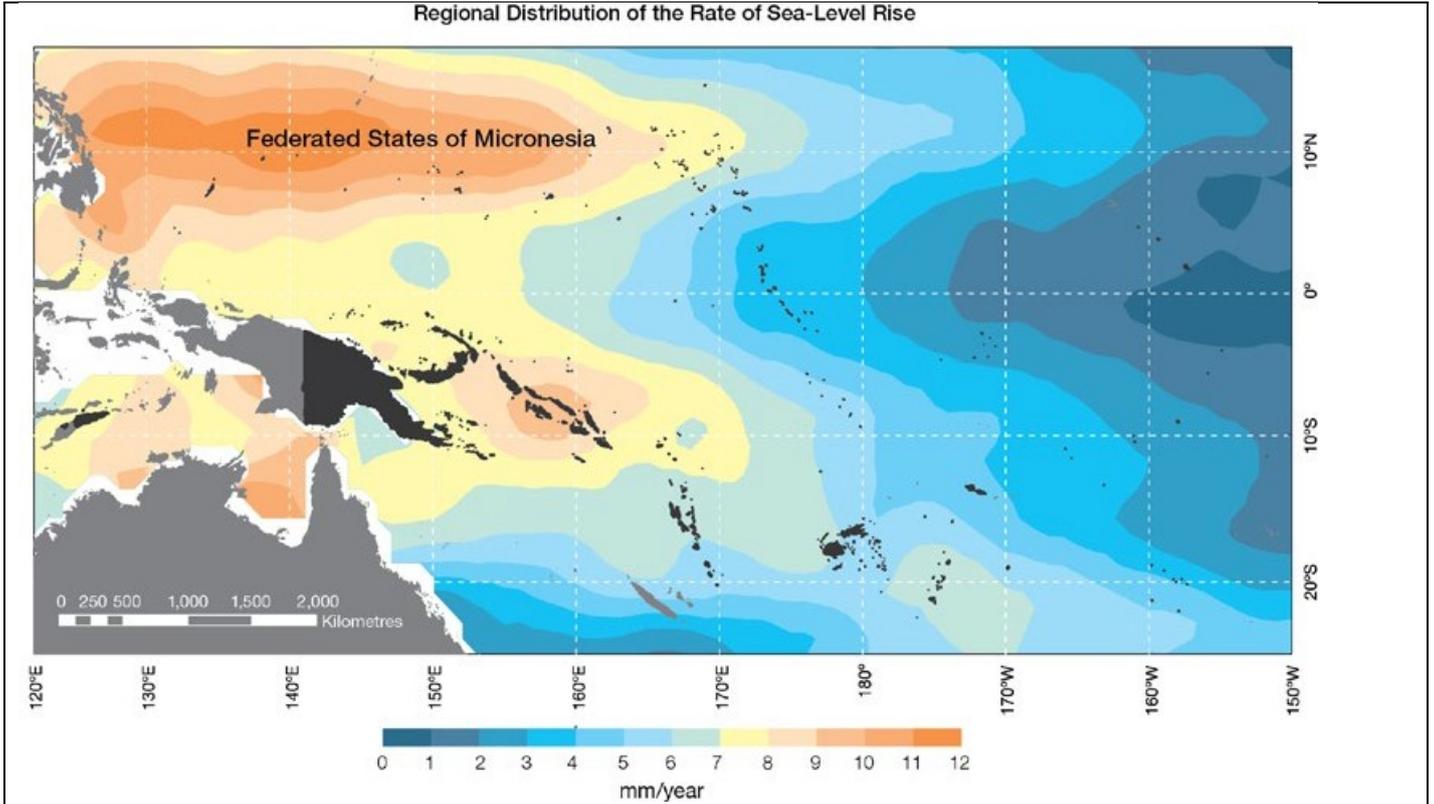
Spatial Maps of Rainfall and Surface Winds for the Pacific (including FSM)¹⁸

Sea Level Rise and Extreme High Tides

From 1993 – 2010, sea level in the tropical western Pacific has been rising an average of 0.2-0.4in (5-10 mm) per year. For FSM specifically, the value is over 0.39 in (10 mm) per year. This is well above the global mean of about 0.12 in (3 mm) per year over the same period.¹⁹

¹⁸ Vulnerability of Pacific Island agriculture and forestry to climate change (2016); Available at: <https://www.spc.int/sites/default/files/wordpresscontent/wp-content/uploads/2016/12/Vulnerability-of-Pacific-Island-agriculture-and-forestry-to-climate-change.pdf>

¹⁹ Federated States of Micronesia Second National Communication on Climate Change pg. 28; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communiation-to-the-UNFCCC.pdf>



Rate of Sea Level Rise 1993 - 2010

By 2030, under a high emissions scenario, this rise in sea level is projected to be in the range of 3.1-7.1 inches (8-18 cm). The sea-level rise combined with natural year-to-year changes will accentuate the impact of storm surges and coastal flooding. Frequency of extreme high sea level (tidal surges) for FSM are projected to increase dramatically as a result of climate change.²⁰

Sea Level Rise Projections for FSM

Emissions Scenario	2030	2050	2070	2090
Very low (RCP 2.6)	3.1–7.1 in (8–18 cm)	5.5–11.8 in (14–30 cm)	7.9–17.7 in (20–45 cm)	9.4–23.6 in (24–60 cm)
Low (RCP 4.5)	3.1–6.7 in (8–17 cm)	5.5–12.2 in (14–31 cm)	8.7–19.3 in (22–49 cm)	11.8–26.8 in (30–68 cm)
Medium (RCP 6)	2.8–6.7 in (7–17 cm)	5.5–11.8 in (14–30 cm)	8.7–18.9 in (22–48 cm)	12.2–27.2 in (31–69 cm)
High (RCP 8.5)	3.1–7.1 in (8–18 cm)	6.7–13.8 in (17–35 cm)	11.0–23.2 in (28–59 cm)	16.1–35.4 in (41–90 cm)

Droughts

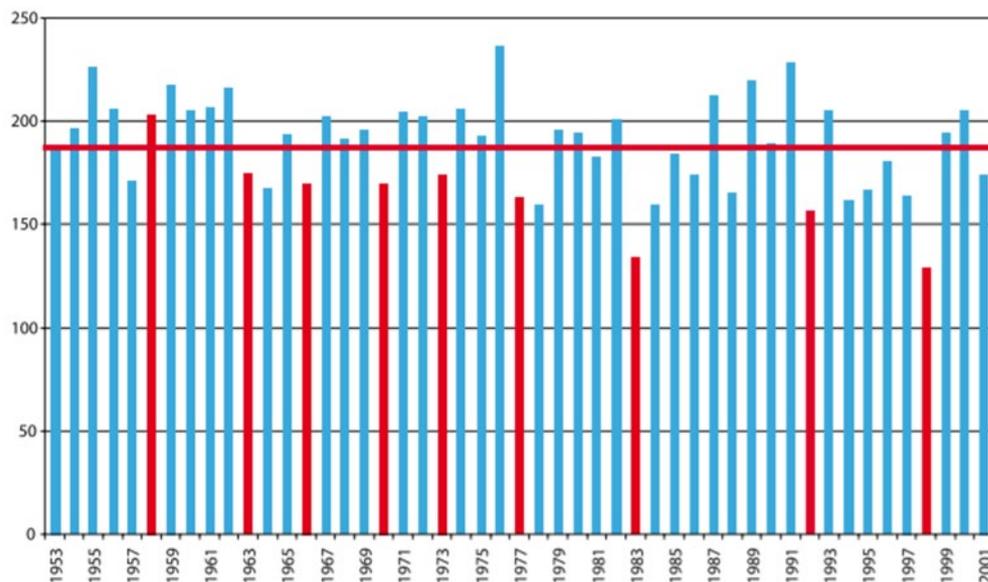
Nearly all extremely dry years occur during the year following an El Niño event. The droughts of 1982-1983 and 1997-1998 were especially severe on terrestrial habitats, increasing localized threats to biodiversity. Groundwater sources were taxed, agricultural systems damaged and problems associated with wildfires and invasive species were greatly aggravated. Insufficient rainfall caused water and food shortages, including staples such as taro, coconut,

²⁰ Federated States of Micronesia Second National Communication on Climate Change pg. 30; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communication-to-the-UNFCCC.pdf>

breadfruit, banana, yam, sweet potato, citrus, and sugar cane. Communities in the atolls survived because bottled water, food supplies, and reverse osmosis pumps were imported. The Kapingamarangi Atoll was hard hit by two droughts in 1997 and 1998, due to El Niño/La Niña influences in those years, resulting in a severe reduction in local food crops, especially the three main food sources of the atoll: breadfruit, coconut, and taro. A survey undertaken in April 1999 revealed 75% of the breadfruit trees and 68% of the coconut trees were either severely stressed and/or dying. Meanwhile, taro, the primary source of starch on the atoll, was estimated to be at 25% of its pre-drought levels, with importation from other islands needed to make up the deficit.

FIGURE 19 | Time series of annual rainfall at the Pohnpei Weather Service Observatory (WSO). Most post-El Niño years (red bars) are dry

Source: Lander and Khosrowpanah, 2004



The incidence of drought is also expected to decrease over the 21st century (except during ENSO conditions as outlined below), consistent with an overall increase in rainfall for FSM. Recent projections suggest that:

- mild drought will occur:
 - approximately eight to nine times every 20 years in 2030
 - approximately seven to eight times every 20 years by 2090 under the B1 (low) emissions scenario,
 - and six to seven times under the A1B (medium) and A2 (high) scenarios
- moderate drought will occur:
 - once to twice every 20 years in 2030
 - once every 20 years in 2090 for all emissions scenarios
- severe droughts will occur:
 - approximately once every 20 years across all time periods and scenarios

Below is the statistical spread for drought projections in FSM. ²¹

²¹ Pacific-Australia Climate Change Science and Adaptation Planning Program; Available at: https://www.pacificclimatechangescience.org/wp-content/uploads/2014/07/PACCSAP_CountryReports2014_WEB_140710.pdf

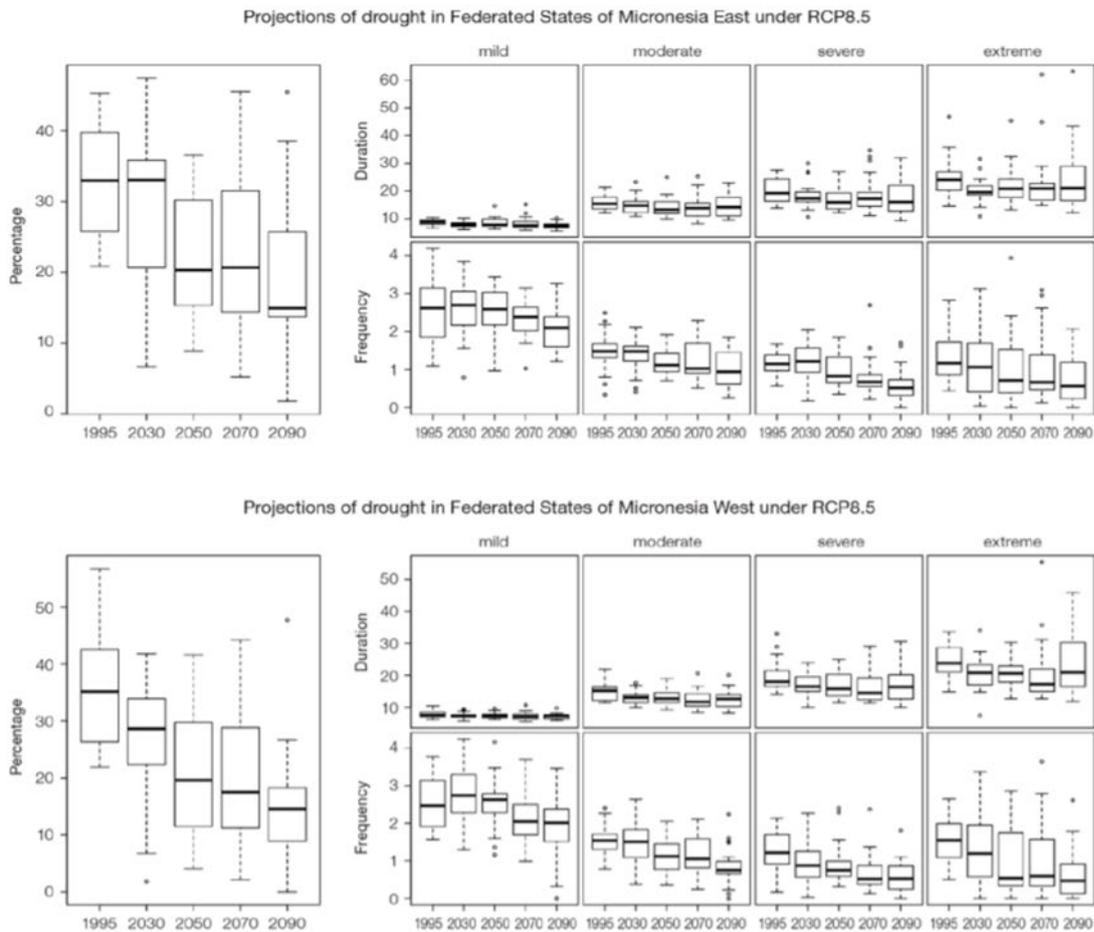


Figure 4.10: Box-plots showing percent of time in moderate, severe or extreme drought (left hand side), and average drought duration and frequency for the different categories of drought (mild, moderate, severe and extreme) for the eastern (top) and western (bottom) Federated States of Micronesia. These are shown for 20-year periods centred on 1995, 2030, 2050, 2070 and 2090 for the RCP8.5 (very high emissions) scenario. The thick dark lines show the median of all models, the box shows the interquartile (25–75%) range, the dashed lines show 1.5 times the interquartile range and circles show outlier results.

ENSO Events and Droughts

Another uncertain risk of climate change stems from its impact on El Niño and ENSO. As highlighted in the sections above and the graphs for rainfall and temperature, El Niño/La Niña El Niño events cause significant variability in climate for FSM. El Niño events in FSM tend to cause droughts which have resulted in water and food shortages (including staples such as taro, coconut, breadfruit, banana, yam, sweet potato, and citrus), impacts on terrestrial habitats, wildfires, and invasive species.²²

²² Federated States of Micronesia Second National Communication on Climate Change; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communiation-to-the-UNFCCC.pdf>

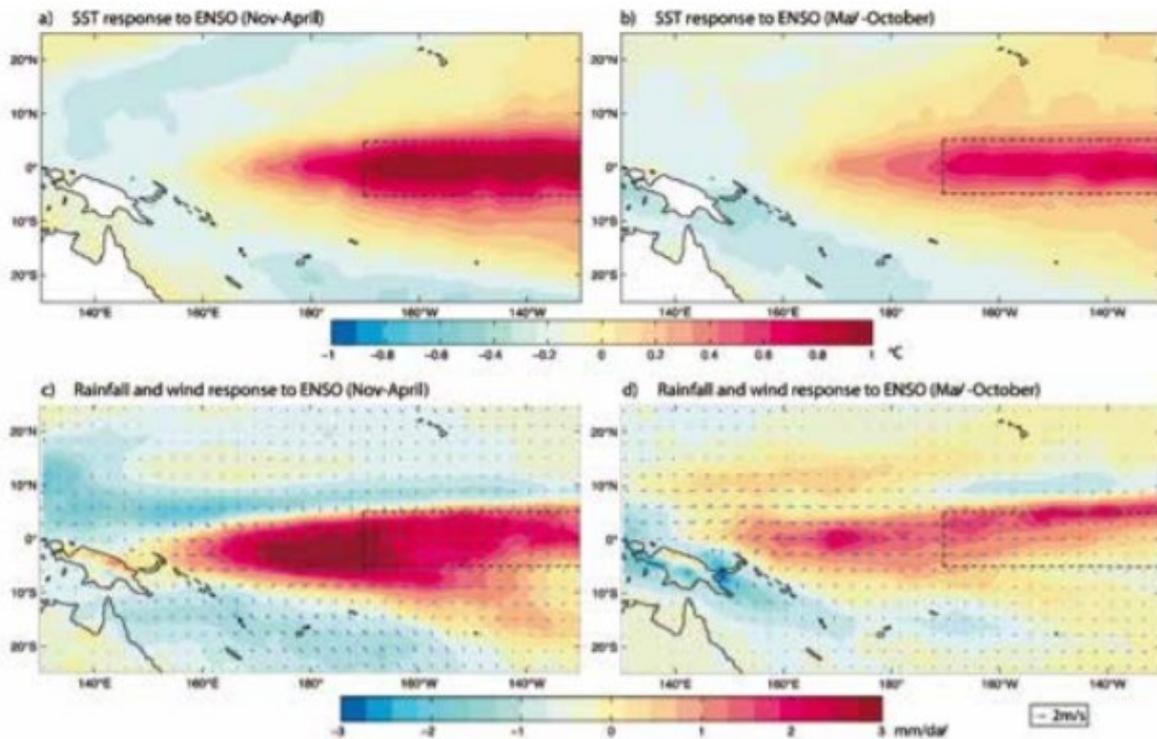


Figure 2.8 Typical ENSO-related changes to (a, b) SST, and (c, d) rainfall and surface winds for November–April (left) and May–October (right). Calculated as SST, rainfall or wind regressed against the NINO 3.4 index, 1979–2011. Box delineates the NINO 3.4 SST region which extends to 120°W (source: rainfall and winds from Dee et al. 2011; HadISST, (Rayner et al. 2003).

Spatial Variation in SST and Rainfall in the Pacific Region²³

ENSO variations also significantly impact the mean sea level across FSM which impacts tidal surges, rainfall, and extreme events like typhoons. The ENSO cycle has a profound effect on the distribution of tropical cyclones in the FSM. During La Nina events, above average numbers of tropical storms occur in the FSM region. The formation region of cyclones is also impacted. During El Nino, typhoon formation extends eastward resulting in an increased risk of a typhoon for Pohnpei during El Nino years, and a decreased risk during the year following El Nino and during La Nina years. On Pohnpei, the risk of having typhoon force winds of 65 kt (33.4ms⁻¹) or greater is one year in 10 for El Nino years, and approximately one year in 50 for non-El Nino years. Overall, the effect that climate change will have on ENSO incidence and severity remains a critical uncertainty, but it has the potential to dramatically shape climate and impact in FSM.

²³ Vulnerability of Pacific Island agriculture and forestry to climate change (2016); Available at: <https://www.spc.int/sites/default/files/wordpresscontent/wp-content/uploads/2016/12/Vulnerability-of-Pacific-Island-agriculture-and-forestry-to-climate-change.pdf>

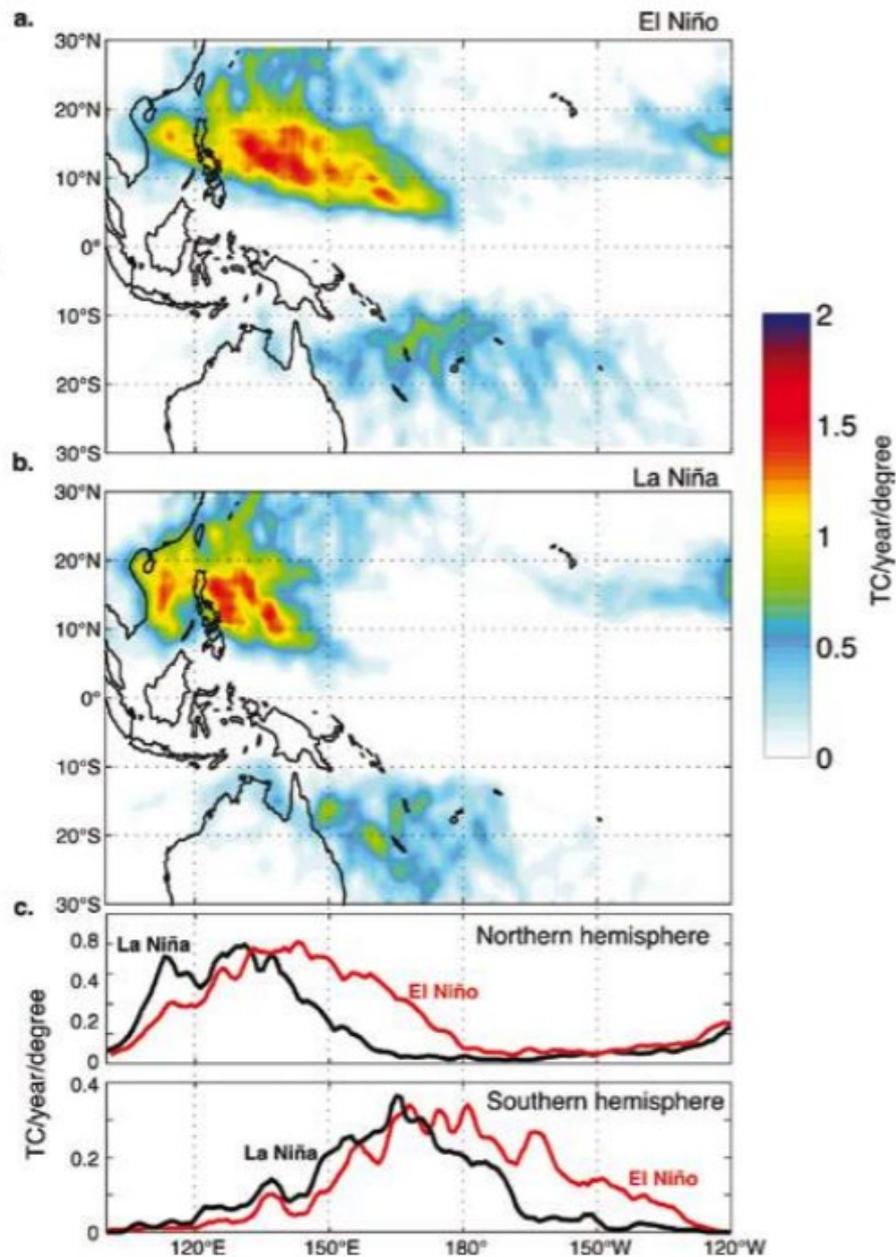


Figure 2.10 Average number of tropical cyclones per year and 1 degree boxes for a) El Niño, b) La Niña, and c) meridionally-averaged tropical cyclone numbers for the Northern (top; 0°–28°N) and Southern (bottom; 0°–28°S) Hemispheres during El Niño (red) and La Niña (black) (source: IBtrACS data, 1969–2013; years identified from NINO3.4 index > or < 1sd).

Tropical Cyclones and ENSO Conditions in the Pacific²⁴

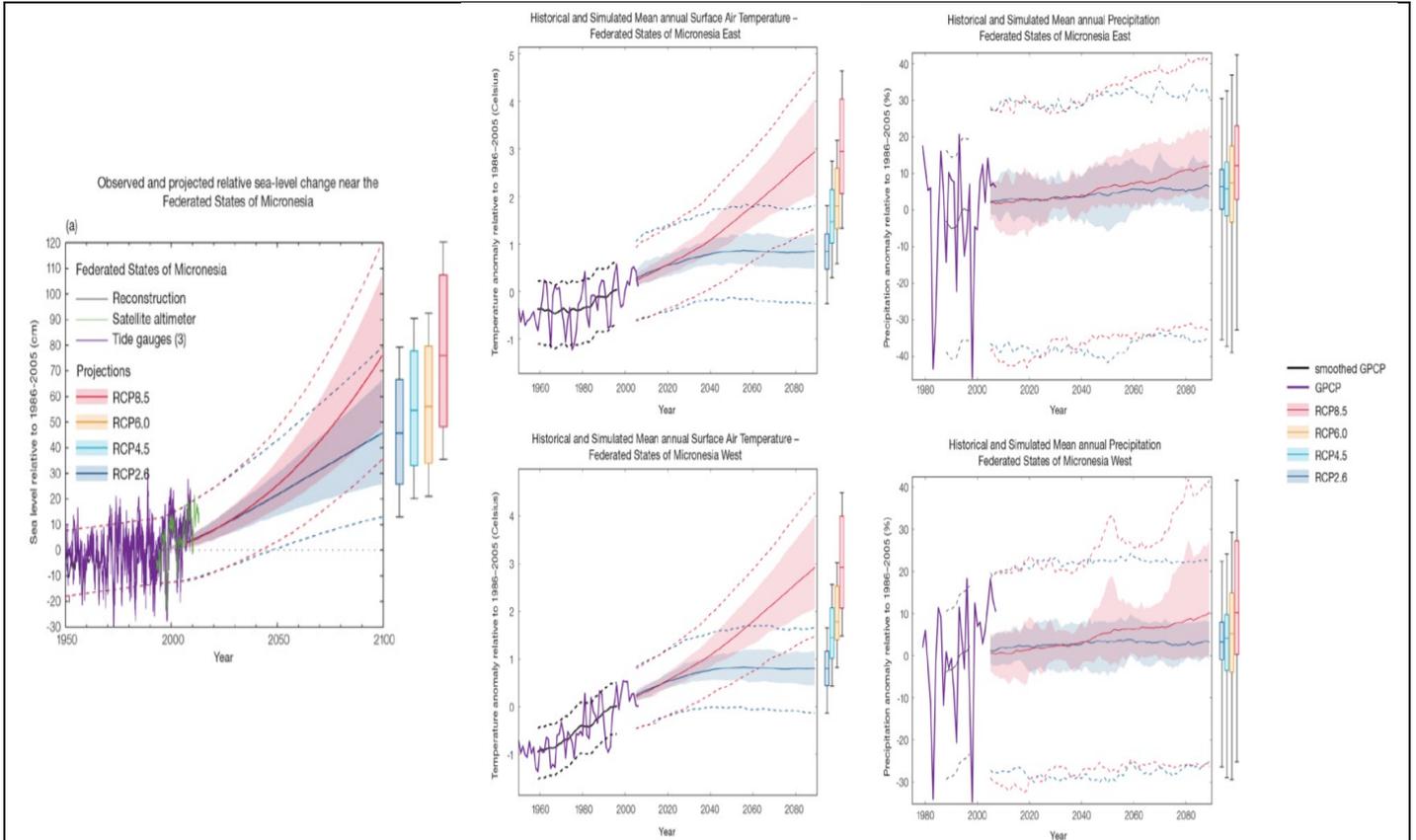
Climate Effects Overview

At a glance, FSM projections for future climate change include a significant increase in sea level rise coupled with an increase in tidal surges, uncertain changes to ENSO magnitude and frequency which is the key driver for both

²⁴ Vulnerability of Pacific Island agriculture and forestry to climate change (2016); Available at: <https://www.spc.int/sites/default/files/wordpresscontent/wp-content/uploads/2016/12/Vulnerability-of-Pacific-Island-agriculture-and-forestry-to-climate-change.pdf>

droughts and typhoons/tropical storms in FSM, an increase in annual precipitation and temperature (particularly beyond 2050). High level projections are summarized below:

- **Sea Level Rise** – By 2030, under a high emissions scenario, the rise in sea level is projected to be in the range of 3.1-7.1 inches (8-18 cm). Under a medium emissions scenario, sea level rise is projected to increase by 9 cm by 2030 and 39 cm by 2050. This amount of sea level rise is expected to inundate many low-lying coastal areas on all islands in FSM.
- **Tidal Surges** – By 2030 and 2050 dangerous high tide events are expected to exceed the 2-meter threshold 12% and 27% of the time respectively due to sea level rise creating significant potential risks for food security and agriculture in FSM.
- **Typhoons and Tropical Storms** – Overall, the effect that climate change will have on ENSO incidence and severity remains a critical uncertainty, but it has the potential to dramatically shape climate and impact in FSM, particularly through the occurrence of tropical storms and typhoons. An increase in the magnitude and/or frequency of El Nino conditions (coupled with increased sea surface and atmospheric temperatures) could cause more severe tropical storms and typhoons in the future.
- **Precipitation** – An increase in annual precipitation over large parts of the tropical Pacific is predicted for a warmer climate, with impact prior to 2030 being minimal. After 2030, more distinctive patterns emerge, which will become progressively stronger with time and for higher emission scenarios (RCP6 and 8.5). Current projections indicate a 2% increase (+/- 9%) by 2030 and increase 7% (+/- 14%) by 2055.
- **Droughts** – Although drought frequency is expected to decrease in FSM due to climate change, the effects of climate change on ENSO conditions is relatively uncertain. An increase in the magnitude of El Nino conditions (coupled with increase atmospheric temperatures) could cause more severe droughts in the future.
- **Air Temperature** – Projections for all emissions scenarios indicate that the annual average air temperature and sea-surface temperature will increase in the future in FSM. By 2030, under a very high emissions scenario, this increase in temperature is projected to be in the range of 1.1–2.0°F (0.6–1.1°C). Between 2030 and 2050, temperatures will be influenced by the emission scenario with projections of 0.5°– 1°C (very low scenario) to 1°–2°C (very high scenario) increases by 2050, and beyond 2050, the temperatures again vary significantly depending on the emission scenario.
- **Sea Surface Temperature** – Increase 0.7°C (+/- 0.5) by 2030 and 1.3°C (+/- 0.5) by 2055.
- **Ocean Acidification (Aragonite saturation)** – 3.3 (+/- 0.2) by 2030 and 3.0 (+/- 0.2) by 2055 – dangerous levels for coral start at 3.5 and extremely dangerous start at 3



Projections for Sea Level Rise, Surface Air Temperature, and Precipitation

Sea Level Rise, Storm Surge, King Tides, and Saltwater Intrusion Impacts on Agriculture

One of the most comprehensive reviews of climate change and agriculture in the Pacific²⁵ highlighted that for most staple food crops, extreme weather events including storm surges and king tides (and the resulting salinization) are most likely to have the greatest impact in the short- to medium-term timescale (2030–2050), compared with changes in mean temperature where significant impacts are not expected before 2050. Most cash crops and high value horticultural products are also highly vulnerable to extreme weather events, accounting for many of the losses that occur in the Pacific. **The projected increase in the frequency and intensity of extreme weather events due to climate change poses the greatest risk to cash crop production over the next few decades.**

This conclusion is supported by a number of other publications. The World Food Programme’s Pacific Interim multi-country strategic plan (2019 – 2022)²⁶ highlights that “The increasing number and intensity of natural hazards is the main driver of food insecurity in the region” and that the effects of extreme weather patterns, including cyclones, salinization due to sea level rise and the increase in sea water temperature exacerbate the already fragile natural environments of the PICTs, making it increasingly difficult to produce enough food to meet their populations’ needs.” And further that, while hunger and malnutrition in the Pacific are driven by other sociocultural drivers, the most severe challenges to maintaining development gains and making further progress towards the achievement of the SDGs are posed by the increase in frequency and impact of extreme weather events such as tropical cyclones and El Niño-related droughts, which reduce the amount of arable land suitable for farming. The PICTs are particularly vulnerable because fertile coastal plains are threatened by super storms and saltwater intrudes into previously fertile land as sea levels rise.” The Asian Development Bank’s Food Security and Climate Change in the Pacific²⁷ similarly highlighted the loss of land due to inundation as the primary adaption need for agricultural production and food security in FSM. IPCC’s Fifth Report focuses on extreme weather, sea level rise, cyclones, etc. as “key risks” for adaptation in small

²⁵ Vulnerability of Pacific Island agriculture and forestry to climate change (2016); Available at: <https://www.spc.int/sites/default/files/wordpresscontent/wp-content/uploads/2016/12/Vulnerability-of-Pacific-Island-agriculture-and-forestry-to-climate-change.pdf>
²⁶ WFP - Pacific interim multi-country strategic plan (2019-2022); Available at: https://docs.wfp.org/api/documents/WFP-0000104713/download/?_ga=2.132596174.1960685493.1602018574-1840080192.1602018574
²⁷ ADB - Food Security and Climate Change in the Pacific (2011); <https://www.adb.org/sites/default/files/publication/29078/climate-change-food-security.pdf>

islands.²⁸ Finally FAO's vulnerability assessment report²⁹ for FSM's agriculture sector highlighted that "FSM is highly vulnerable to impacts of natural variability and climate change as evidenced through actual extreme weather events such as typhoons, storms, drought, flooding that have affected peoples food security and livelihoods by destroying staple crops and terrestrial and marine ecosystems."

As above, **saltwater intrusion from coastal erosion, sea level rise, and extreme events are the critical climate risks for food security in FSM.** It must be noted that almost all outer island islets lie within the 2-meter zone of potential sea level rise, and all lie within a 5-meter zone of storm surge. Many of these islands already have had to abandon taro patches because of inundation in the past.³⁰ In urban areas on the high islands, most of the agricultural areas are located around coastal areas and are vulnerable to rising ocean waters and are already enduring increased flooding and drainage problems.³¹ Further, the high islands of the FSM will need to begin now to prepare for rapid population increase in the form of climate change refugees from low-lying islands, while at the same time, enhancing and adapting their own food production systems.

Sea level rise analysis was conducted for the main islands for the States of Yap, Chuuk, Pohnpei and Kosrae. This analysis utilized projections of 0.3 meters of sea level rise by 2055 and 0.62 meters of sea level rise by 2090. The projected sea level rise for Yap indicates that there will be inundation of large parts of existing coastline and low-lying areas of the main island.³² The main island of Pohnpei will experience coastal changes due to sea level rise by 2055 as well as salt water inundation of low-lying areas, including the Pohnpei airport.³³ The main island of Chuuk and the other islands located in the main atoll are also projected to experience coastal changes due to sea level rise by 2055 along with salt water inundation.³⁴ The main island of Kosrae is projected to experience sea level inundation of low-lying areas up through 2090.³⁵

²⁸ IPCC 5th Report; Available at: https://www.ipcc.ch/site/assets/uploads/2018/02/WGIAR5-PartB_FINAL.pdf

²⁹ FAO Climate risks, vulnerabilities and impacts of climate change on the agricultural sector in FSM: Assisting Small Island States to Integrate the Agricultural Sectors into Climate Change Priorities and Nationally Determined Contributions (2020); Draft available in Annex 13

³⁰ FSSLP vis FSMNC2; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communication-to-the-UNFCCC.pdf>

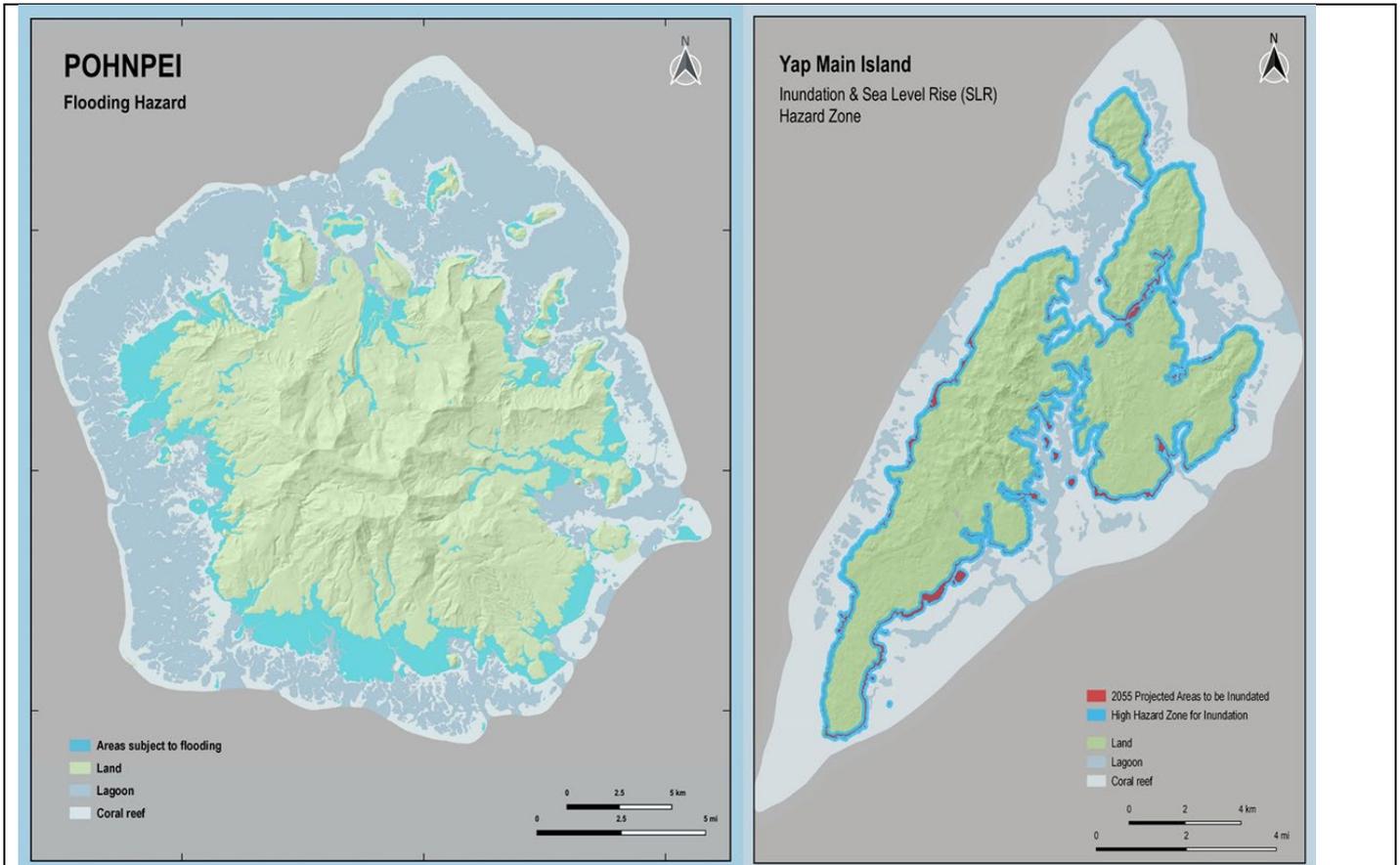
³¹ Statewide Assessments and Resource Strategies via FSMNC2 pg. 64 Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communication-to-the-UNFCCC.pdf>

³² Department of Environment Climate Change and Emergency Management (DECEM) FSM. Yap State Vegetation Overlay Analyses Vulnerability Map (2055 – 2090 Scenarios).

³³ Department of Environment Climate Change and Emergency Management (DECEM) FSM. Pohnpei Vegetation Overlay Analysis Vulnerability Map (2055 Scenario).

³⁴ Department of Environment Climate Change and Emergency Management (DECEM) FSM. Chuuk State Vegetation Overlay Analyses Vulnerability Map (2055 – 2090 Scenarios)

³⁵ Department of Environment Climate Change and Emergency Management (DECEM) FSM. Kosrae State Vegetation Overlay Analyses Vulnerability Map 2030, 2055 and 2090 Scenarios.



Flooding Hazard Zones for Pohnpei and Yap

Aside from direct crop damage from inundation and erosion, increasing soil salinity is the greatest threat to crop productivity on the atolls of FSM.^{36,37} Saltwater intrusion from coastal erosion, sea level rise, and extreme events is a critical risk for food security and agricultural production. For example, the most fertile soils in Yap State are all vulnerable to saltwater intrusion. Increasing soil salinity is the greatest threat to crop productivity on the atolls of FSM. Increasing soil salinity of atoll soils to 6ds/cm kills crops like cassava, pawpaw, and yams. And when soil salinity is increased to 12ds/cm (a condition caused by sea water inundation), only coconut and the dryland giant taro (sawahn Hawaii, tannia, *Xanthosoma sagittifolium*) can survive.³⁸

Although conditions vary slightly by island, the majority of the fertile, alluvial soils that are suitable for endemic food production (breadfruit, banana, taro) are located in low-lying areas on the high, volcanic islands.³⁹ Both the volcanic and atoll agricultural areas are susceptible to coastal erosion and saltwater inundation from storm surges and sea level rise. Taro patches, which are generally located in low-lying areas, are especially susceptible to saltwater inundation. The coastline of many volcanic and atoll islands in FSM harbor mangrove forests, which act as a buffer from storms and reduce saltwater inundation. However, sea level rise is already affecting the ability of mangroves to shield agroforests and other agricultural areas from sea water intrusion.

Watersheds on the higher, volcanic islands generally allow for sufficient freshwater availability during non-drought years whereas low-lying atolls typically rely on a more fragile freshwater lens for their water supply. Both the mountainous watersheds and freshwater lenses are susceptible to degradation from storm surges and sea level rise. Additionally, during ENSO years drought can occur and negatively affect agricultural production, especially in the more water deficient outer atolls. Watershed health is also dependent on upland forest health and stability. Non-

³⁶ Fourteen Atoll Assessment of Food Security via FSMNC2 pg. 58-59; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communiation-to-the-UNFCCC.pdf>

³⁷ Increasing soil salinity of atoll soils to 6ds/cm kills staple crops like cassava, pawpaw, and yams. And when soil salinity is increased to 12ds/cm (a condition caused by sea water inundation), only coconut and the dryland giant taro (sawahn Hawaii, tannia, *Xanthosoma sagittifolium*) can survive.

³⁸ Fourteen Atoll Assessment of Food Security via FSMNC2 pg. 58-59; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communiation-to-the-UNFCCC.pdf>

³⁹ Federated States of Micronesia State-Wide Assessment and Resource Strategy 2010 – 2015 +. Last Accessed 02 August 2020.

climatic factors including deforestation, landfills and dredging have affected watershed health in recent years and subsequently agriculture that relies on watershed resources. Further, impacts of climate change, particularly sea level rise, increased erosion and saltwater damage, and clearing of stands to compensate for lost arable land are driving a substantial decline in forestry resources, particularly barrier ecosystems in FSM.⁴⁰ The Integrated Agriculture Census highlighted that at least 60% of households with land for agriculture experienced some loss from weather, diseases, pests, or other reasons for any crop. 5-12% of households across the States reported issues with invasive species, 5-15% issues with flooding, 3-22% issues with sea water, and 2-47% issues with drought.⁴¹

In addition to the risks outlined above, sea level rise and intensifying rainfall and storm events from climate change also exacerbate existing risks from tidal surges in FSM. Extreme tides, known as “king tides,” cause significant flooding, salinization, and erosion that ultimately damage groundwater resources, taro beds, soil, and agroforestry resources in coastal settings, especially in the low islands.^{42,43,44} Currently about 97% of high tides are less than 2 meters, but by 2030 and 2050 dangerous high tide events are expected to exceed the 2-meter threshold 12% and 27% of the time respectively creating significant potential risks for food security and agriculture in FSM.⁴⁵

Precipitation, Temperature, and Pests Impact on Agriculture

As highlighted above, the risk of sea level rise, extreme weather events, and salinization are likely to be much larger drivers of climate impacts on agriculture in FSM at least until 2050 and beyond when temperature and precipitation variables are likely to have a more pronounced impact, especially if global emissions continue to track the high emission scenarios (RCP6.0 and RCP8.5).⁴⁶ Negative production impacts have been assessed as high for rice, swamp taro, domesticated yams, and moderate to high for sweet potato and taro. By contrast the production impacts on cassava, aibika (bele), breadfruit and banana has been assessed as low to moderate; and low for cocoyam, giant taro, and wild yams. However, despite these threats the overall impact on Pacific food crop production is expected to be generally low over the next few decades and far less than the impact on imported grain crops from other regions. A summary of temperature, precipitation, and pest impacts from the Pacific vulnerability report can be seen generally as follows:

- **Temperature** – Pacific root and tuber crops will be less affected by projected climate conditions than cereal crops. Generally, the projected temperature increases (0.5°–1°C regardless of emission scenario) up to 2030 will not affect production, based on what is currently known for optimum crop production conditions. Between 2030 and 2050, temperatures will be influenced by the emission scenario with projections of 0.5°–1°C (very low scenario) to 1°–2°C (very high scenario) increases by 2050, and beyond 2050, the temperatures again vary significantly depending on the emission scenario. Specific impacts are difficult to predict based on current knowledge, but obviously temperatures approaching 2°C and beyond will create significant physiological stress for many of the staple crops.⁴⁷
- **Precipitation** – An increase in annual precipitation over large parts of the tropical Pacific is predicted for a warmer climate, with impact prior to 2030 being minimal. After 2030, more distinctive patterns emerge, which will become progressively stronger with time and for higher emission scenarios (RCP6 and 8.5). Projected rainfall increases for countries such as PNG, parts of Solomon Islands, Palau and the FSM will need to be considered in the context of rainfall that is currently high. An increase of 25% in mean annual rainfall would

⁴⁰ Fourteen Atoll Assessment of Food Security via FSMNC2 pg. 57; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communiation-to-the-UNFCCC.pdf>

⁴¹ FSM Integrated Agriculture Census 2016 (2020); Available at: http://www.fsmrd.fm/wp-content/uploads/2020/06/200120_FSM_IAC_2016.pdf

⁴² Climate Change in the Federated States of Micronesia Food and Water Security, Climate Risk Management, and Adaptive Strategies (2010); Available at: <https://pubs.er.usgs.gov/publication/70041522>

⁴³ Perkins and Krause, Adapting to climate change impacts in Yap State, Federated States of Micronesia: the importance of environmental conditions and intangible cultural heritage, *Island Studies Journal* (2018); Available at: <https://doi.org/10.24043/isj.51>

⁴⁴ Post Disaster Assessments of FSM Outer Islands Via FSMNC2 pg. 81; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communiation-to-the-UNFCCC.pdf>

⁴⁵ Assessment of a Centennial Event for Climate Change in Chuuk via FSMNC2 pg. 91; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communiation-to-the-UNFCCC.pdf>

⁴⁶ Vulnerability of Pacific Island agriculture and forestry to climate change (2016); Available at: <https://www.spc.int/sites/default/files/wordpresscontent/wp-content/uploads/2016/12/Vulnerability-of-Pacific-Island-agriculture-and-forestry-to-climate-change.pdf>

⁴⁷ Vulnerability of Pacific Island agriculture and forestry to climate change (2016); Available at: <https://www.spc.int/sites/default/files/wordpresscontent/wp-content/uploads/2016/12/Vulnerability-of-Pacific-Island-agriculture-and-forestry-to-climate-change.pdf>

have a significant damaging effect on crop production in locations where rainfall is already high to very high.⁴⁸

- **Pests** – Of importance also is the impact of extreme events on pest and disease outbreaks. There is very limited information regarding how climate change will influence pest and disease incidence and distribution, so projections are difficult. However, projections for changing climate in the Pacific generally improves conditions for pest growth and spread.⁴⁹ An assessment of food security in FSM specifically also identified the possibility of climate change triggering expanded opportunities for pests and disease in staple crops specifically, fruit flies, mealybugs, scale insects, and whiteflies.⁵⁰ A further assessment highlighted uncertain impacts of climate change on pests, but noted that there was significant potential for expanded optimal conditions for pest spread, particularly for fruiting trees.⁵¹

The specific impact on crop yield within FSM and across PICTs across staple crops is summarized in the table below.

Potential Impacts on Pacific Crop Production from Climate Change

Crop	General Summary	Temperature	Precipitation	Pests
Sweet Potato	<p>2030 – 2050: Impact on tuberisation and yield will be greatest in those countries where rainfall is already high, and where temperature is currently around 32°C. Impact on pests and diseases is unclear — possibly increased pressure from sweet potato scab. Overall production assessment impact: moderate</p> <p>Beyond 2050: Increasingly serious impact for those countries where there is currently high rainfall and temperatures, especially with high emissions scenario. The impact on pests and diseases is unclear. Overall production assessment impact: moderate to high</p>	<p>An increase of 1°–2°C (very high emission scenario) by 2050 would affect production in countries where temperatures are currently around 32°C (e.g. the Federated States of Micronesia), within one or two generations, which would have major food security implications. Beyond 2050, the food security implications under all emission scenarios except RCP2.6 could be serious. Extreme heat events would also be expected to have impacts in countries with temperatures around 32°C. The impact would depend on the timing and duration of the event, as well as soil moisture levels.</p>	<p>An increase in mean annual rainfall might cause some reductions in tuber yield, particularly on heavy clay soils. Excessively high soil moisture, however, particularly during initiation (6–10 weeks after planting) reduces tuber yield. Where rainfall is already very high, most growers will find it difficult to counter a significant rainfall increase — an increase in rainfall, particularly between October and March, would result in yield reductions in many locations.</p>	<p>A wetter climate could increase problems with sweet potato scab.</p>
Cassava and Yams	<p>2030 – 2050: Cassava impact is expected to be minimal, but extreme rainfall events could cause problems with waterlogging. Cyclone intensity could cause lodging problems which would affect growth.</p>	<p>While the optimum temperature for cassava tuber growth is 25°–29°C, it will tolerate a wide temperature range of 12°–40°C. Thus, increases in average temperature, even up to 2°C and beyond, are not expected</p>	<p>Overall, it could be expected that a wetter environment would favour cassava and yam production compared with other root crops. However, Cassava is particularly susceptible to</p>	<p>Higher rainfall will increase the incidence and intensity of yam anthracnose disease, possibly resulting in</p>

⁴⁸ IBID.

⁴⁹ IBID

⁵⁰ Fourteen Atoll Assessment of Food Security via FSMNC2 pg. 61; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communication-to-the-UNFCCC.pdf>

⁵¹ http://pubs.iclarm.net/resource_centre/2015-15.pdf

	<p>Possible yield benefits from eCO₂. For yam production, impact from increased intensity of cyclones would be expected and increased rainfall likely to increase incidence and spread of anthracnose. Overall production assessment impact: cassava (insignificant to low) wild yam (insignificant) domesticated yams (moderate to high)</p> <p>Beyond 2050: Extreme rainfall and cyclone events would be likely to increase lodging and waterlogging problems. It is unclear how cassava pests and diseases will be impacted. Possible yield benefits from eCO₂. For yams, projected temperature rise could affect bulking and therefore yield. Damage from cyclones would occur and increasing rainfall levels would intensify anthracnose problems. Overall production assessment impact: cassava (Low to moderate), wild yams (low) and domesticated yams (high)</p>	<p>to have a significant impact on cassava production. Extreme heat days would also be expected to have little impact, but as with all crops the ability to manage heat stress will be influenced by precipitation.</p>	<p>waterlogging. Based on simulations in Fiji using three different future climate change scenarios (warmer through to warmer/drier conditions), tuber yields were projected to decline by up to 9% by 2030, and up to 18% by 2050. In addition to declines in yield, the year-to-year variability was shown to increase by up to 19% by 2030 and up to 28% by 2050 (the increase in variability is driven by more frequent lower yielding years).</p>	<p>epidemic developments with serious implications for yam production.</p>
<p>Taro and other Aroids</p>	<p>2030 – 2050: Countries where rainfall levels are currently a constraint could be more able to grow taro. Increased intensity of cyclones could cause damage depending on stage of crop growth. For cocoyam and giant taro — impact is expected to be minimal. For swamp taro — increasing losses from saltwater intrusion are likely. Taro — possible yield benefits from eCO₂. Overall production assessment impact: taro (low to moderate), cocoyam (insignificant), swamp taro (moderate to high), giant taro (insignificant)</p>	<p>Modelling studies suggest that projected changes in mean climate conditions will have little effect on taro production, with the exception of extremely low rainfall. Extreme heat days are likely to pose a threat in this regard. In the long term, as 30°C is the optimum temperature for taro, temperature increases of 2°C and beyond could impact on production, and similarly with the other aroids, possibly with the exception of swamp taro.</p> <p>It is likely that cocoyam production will remain unaffected by changes in temperature in the short</p>	<p>Overall wetter conditions would generally favour taro production and extend the areas available for successful cultivation. Taro can be highly tolerant of waterlogging, depending on the variety. Taro cannot survive prolonged moisture stress, which seldom poses a problem in traditional food gardens</p>	<p>A rise in minimum night-time temperature increases the likelihood of TLB spreading to locations currently free of the disease. The vulnerability of susceptible taro varieties to TLB will be increased if higher levels of humidity are associated with higher night temperatures. Increased</p>

	<p>Beyond 2050: Very high temperature increases (>2°C) could affect production especially in countries where temperatures are currently high. Cyclones will continue to cause damage. A continued spread and increase of TLB and other taro pests and diseases would also be expected. For cocoyam and giant taro — temperature (>2°C) would be a constraint to productivity. Swamp taro could disappear from atoll environments. Taro — possible yield benefits from eCO₂. Overall production assessment impact: taro (moderate to high), cocoyam(low), swamp taro (high), giant taro (low)</p>	<p>term. However, as a marked reduction in mean temperature is required for tuber bulking, the projected temperature increases in the long term and extreme heat events, depending on timing and duration, could be significant.</p>		<p>rainfall would also favour the spread of Pythium (which would affect both taro and cocoyam) and probably taro armyworm or caterpillar.</p>
<p>Bananas</p>	<p>2030 – 2050: Favour cultivation in currently sub-optimal locations and at higher altitudes. Higher temperatures could affect flowering and fruit filling. Higher temperatures could increase pest and disease. Increase in cyclone damage. Overall production assessment impact: low</p> <p>Beyond 2050: Increased pest and disease pressure (Fusarium wilt, nematode and weevil) is likely though the enhancing impact of rainfall on BLDS could be lessened by higher temperature. The heat stress effect on flowering and fruit filling would increase, as would cyclone damage. Overall production assessment impact: low to moderate</p>	<p>Up to 2030 the projected mean temperature rise of 0.5°–1°C is not likely to result in any significant reduction in banana yields at low altitudes, and could in fact support banana cultivation at higher altitudes. However, temperatures in excess of 35°C (heatwaves) are likely to affect flowering and bunch filling. By 2050 and beyond, temperature could be a significant constraint on banana production at low altitudes, especially if warming proceeds according to the very high emissions scenario (RCP8.5), where 1°–2°C will be reached by 2050, and 2°–4°C by 2090.</p>	<p>The impact of changes in rainfall on bananas is harder to project, but greater irregularity and decreasing rainfall will increase the length of the crop cycle and the seasonality of bunch production. Some banana production areas could have problems with waterlogging. Bananas will grow within a reasonably wide range of rainfall, and therefore in the short to medium term, projected increases in rainfall are unlikely to affect production. In the longer term, beyond 2050, and especially with countries lying between latitudes 5°N and 5°S, the projected rainfall increases could affect production, assuming that 4000 mm rainfall per year is the threshold for the</p>	<p>Optimum temperature for development of black leaf streak disease (BLSD) is 27°C and the disease is reduced by very high temperatures (>36°C).</p> <p>Higher rainfall is also likely to increase pressure from BLSD and from Fusarium wilt.</p>

			banana varieties cultivated in the Pacific. As with temperature, the projected increase in number of heavy rain days is more a cause for concern in the short to medium term, with the potential for waterlogging to affect bunch yield.	
Breadfruit and Aibika	<p>2030 – 2050: Expected to be minimal though cyclone damage likely to increase. Overall production assessment impact: insignificant to low</p> <p>Beyond 2050: Expected to be minimal though higher temperatures could reduce fruiting and fruit quality. Cyclone damage will worsen with increased intensity of cyclones. Possible increase in pest and disease problems. Overall production assessment impact: low to moderate</p>	<p>Increasing temperatures are unlikely to have much impact on breadfruit at least to a 2°C increase, although fruit drop and smaller fruit are likely to be a problem if heat stress is accompanied by low rainfall. Increasing temperatures are unlikely to affect aibika unless accompanied by low rainfall, in which case growth would be affected, as would pest and disease incidence and severity.</p> <p>A study on the cultivation potential of breadfruit (a key staple crop for FSM) under different climate change scenarios in Hawaii and the broader Pacific highlights that using average annual temperature and rainfall projection data to 2070 (CMIP5 model using RCP 4.5 and RCP 8.5) breadfruit suitability increases in area and quality with larger increases under RCP 8.5. The study also highlights that current producing regions (i.e. FSM) largely remain unchanged in both projections, indicating relative stability of</p>	<p>A study on the cultivation potential of breadfruit (a key staple crop for FSM) under different climate change scenarios in Hawaii and the broader Pacific highlights that using average annual temperature and rainfall projection data to 2070 (CMIP5 model using RCP 4.5 and RCP 8.5) breadfruit suitability increases in area and quality with larger increases under RCP 8.5. The study also highlights that current producing regions (i.e. FSM) largely remain unchanged in both projections, indicating relative stability of production potential in current growing regions.⁵³</p>	<p>Drought will reduce growth of aibika and drier weather, will generally increase attack from the Nisotra beetle, jassid and leaf roller. Extremes of rainfall are likely to provide conditions that will encourage increased incidence and severity of pests and diseases of aibika. Increased rainfall will favour collar rot, and stem and tip rot.</p> <p>Increased rainfall is likely to exacerbate damage by Phytophthora palmivora, affecting fruit quality.</p>

⁵³ IBID.

		production potential in current growing regions. ⁵²		
Papaya	<p>2030 – 2050: Severity of some diseases such as Phytophthora and anthracnose likely to increase because of a wetter climate. Increase of 1°C could affect fruit set. Although cyclone frequency is expected to decrease, papaya production will be negatively impacted by likely increasing intensity of cyclones. Overall production and economic impact assessment: low to moderate</p> <p>Beyond 2050: Impacts of increased temperature, increased high rainfall events and intensity of cyclones likely to be significant. It is expected that the competitive position of the Australian papaya industry relative to Fiji and other potential Pacific Island producers will improve. Overall production and economic impact assessment: moderate to high</p>	<p>An increase in mean temperature of 0.5°–1°C (projected for 2030, regardless of emission scenario) could increase the occurrence of ‘female sterility’, in which normally hermaphroditic papaya plants produce male flowers, resulting in poor fruit set and production. However, this increase in temperature during the winter months might also result in better ripening during these normally ‘slow’ months of the year.</p>	<p>Extreme rainfall events can cause damage to tree stands and contribute to waterlogging and washout.</p>	<p>Any increase in rainfall will exacerbate the severity of fungal diseases such as Phytophthora and anthracnose which are already causing production problems.</p>
Mango	<p>2030 – 2050: Fruit set will continue to be adversely affected by unpredictable rains and temperature fluctuations during winter months. Reduction of fruit quality would result from frequent pre-wet season rains. Increasing problems with anthracnose possible. Overall production and economic impact assessment: low to moderate</p> <p>Beyond 2050: High temperatures could affect flowering. Mango production will be</p>	<p>Mango, being a perennial fruit crop, will respond differently to increases in temperature than annual crops. A perennial crop such as mango may survive desiccating conditions, which could be highly beneficial for yield in succeeding growth seasons. An increase of 0.5°–1°C by 2030 will have little or no impact on mango production in the region. However, an increase in mean annual temperature of at least 1.5°C (projected for 2050 under RCP8.5) may</p>	<p>Extreme rainfall events can cause damage to tree stands and contribute to waterlogging and washout.</p>	<p>The impact of climate change on the incidence and severity of <i>Bactrocera frauenfeldi</i> (mango fly) is unclear. Higher rainfall is expected to cause an increase in the pest, but excessive rainfall could also decrease populations</p>

⁵² Cultivation potential projections of breadfruit (*Artocarpus altilis*) under climate change scenarios using an empirically validated suitability model calibrated in Hawaii (2020); Available at: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0228552>

	negatively impacted by increasing intensity of cyclones. Unpredictable rains could also have a significant impact. Possible increasing mango fly and anthracnose problems. Overall production and economic impact assessment: moderate	adversely impact the flowering of mango trees, because floral induction occurs in response to cool temperatures.		(Jackson pers. comm.)
Citrus	2030 – 2050: Minimal impact on pests and diseases of citrus as a result of a warmer and generally wetter environment. Overall production and economic impact assessment: insignificant to low Beyond 2050: Increasing temperature and wetter environment can be expected to increase the incidence of pests and diseases. The likelihood of more intense cyclone events could accentuate the spread of diseases. Overall production and economic impact assessment: low	Citrus trees of the various species and cultivars are widely adapted, and will survive and grow (although sometimes with difficulty) in nearly any climate that does not kill them	Extreme rainfall events can cause damage to tree stands and contribute to waterlogging and washout.	A warming temperature and a wetter environment can be expected to increase the incidence of pests and diseases. More intense cyclone events could accentuate the spread of diseases.
Pineapple	2030 – 2050: Expected to be minimal. Overall production and economic impact assessment: insignificant Beyond 2050: No apparent adverse impact from increasing temperature. Severe rain events and subsequent waterlogging would impact production. An increase in drought events could increase pineapple wilt disease. Overall production and economic assessment impact: low to moderate	No apparent adverse impact from an increase in mean annual temperature is likely for pineapple production	Any increase in severe rain events could negatively impact pineapple because of its susceptibility to waterlogging.	Diseases like pineapple wilt disease, a serious disease of pineapples vectored by <i>Dysmicoccus brevipes</i> , are likely to increase with a reduction in rainfall (Jackson pers. comm.).
Kava and Betel nut	2030 – 2050: More intensive cyclones likely to have significant impact, particularly for plantings not in agroforestry food gardens. Unlikely any significant impact on betel	A 1.5°C increase in mean annual temperature (projected for 2050 under RCP8.5) is unlikely to have an adverse impact	Any overall increase in rainfall levels is unlikely to be damaging to either kava or betel nut production; if rainfall increased in currently	The impact of the projected climate conditions on kava dieback is not clear, except that an

	<p>nut in existing production areas. Overall production impact assessment: insignificant (kava), betel nut (low).</p> <p>Beyond 2050: More intense cyclones expected to have a major impact. Significant increases in rainfall could cause problems with water-logging. How climate projections will affect kava dieback is not known. An increase in rainfall levels in currently dry areas could favour production for betel nut. Overall production impact assessment: moderate (kava), low (betel nut)</p>	<p>on kava and betel nut production.</p>	<p>drier areas, then the impact could be positive.</p>	<p>increase in environmental stress could mean the plant is more susceptible to the disease.</p>
<p>Coconuts</p>	<p>2030 – 2050: No major effect is expected until at least 2050. The main impact will be from the expected increased intensity of cyclones on the increasingly senile population of coconut palms. Overall production and economic impact assessment: Low</p> <p>Beyond 2050: The likelihood of increasingly severe cyclones could have a severe impact on coconut production. Rainfall could reduce production especially in areas where rainfall and cloud cover are already relatively high. The impact of major pests and diseases is unclear; effectiveness of biocontrol agents for rhinoceros beetle could be reduced. Overall production and economic assessment impact: Low to Moderate</p>	<p>Research indicates that rising temperatures and rainfall changes could reduce coconut yields by reducing pollen quality and/or germination, thereby affecting fruit formation and nut development, leading to a smaller number of nuts or empty nuts. An increase in average annual temperature of 1.5°C would enable a further increase in the altitude at which palms bear. In areas where there is a large increase in rainfall, with a concurrent increase in cloud cover, nut production is likely to decline.</p>	<p>Coconuts are unlikely to be significantly impacted by climate change (changes in mean annual temperature and precipitation) until beyond 2050 when, depending on the emissions scenario, rainfall could be a factor affecting production, particularly in those areas where rainfall and cloud cover are already relatively high. Extremes of temperature and periods of drought could lead to reduced yield.</p>	<p>Rising temperatures and lower rainfall could reduce the effectiveness of the fungus, <i>Metarhizium anisopliae</i>, which is still used in the control of rhinoceros beetle. As little is known about Bogia coconut syndrome, it is impossible to predict how this disease will respond to the projected conditions.</p>

It should be noted that while insights for FSM crop yields can be seen in the above table, the data focuses on the entirety of PICTs. While the resilience of these crops cannot be separated from their cropping systems and from the farmers and communities who manage those systems, individualized country level assessments have been more

limited, particularly for FSM. However as highlighted by the 5th IPCC report⁵⁴, **“Uncertainty in the projections is not a sufficiently valid reason to postpone adaptation planning in small islands.** In several small islands, adaptation is being progressed without a full understanding of past or potential impacts and vulnerability. Although assessment of future impacts is hampered because of uncertainty in climate projections at the local island level, alternative scenarios based on a general understanding of broad trends could be used in vulnerability and sensitivity studies to guide adaptation strategies.”⁵⁵

Past ENSO Impacts

The islands of FSM were severely impacted by drought during El Niño conditions of 1997-1998. Insufficient rainfall caused water and food shortages including staples such as taro, coconut, breadfruit, banana, yam, sweet potato, citrus, sugar cane, and others. Communities among the atolls survived because bottled water, food supplies, and reverse osmosis pumps were imported. A survey undertaken in April 1999 revealed 75% of the breadfruit trees and 68% of the coconut trees were either severely stressed and/or dying as a result of the El Niño induced drought. Meanwhile, taro, the primary source of starch on the atoll, was estimated to be at 25% of its pre-drought levels, with importation from other islands needed to make up the deficit.⁵⁶ In 2007 and again in 2008, FSM communities were flooded by a combination of large swell and spring high tides that eroded beaches, undercut and damaged roads, intruded aquifers and wetlands, and inundated communities. Once again food and drinking water were in short supply. Seawater flowed into coastal wetlands and surged up through the water table, killing taro, breadfruit, and other foods. Fresh water ponds and wetlands turned brackish and have not recovered. Crop sites in use for generations were physically and chemically damaged or destroyed on approximately 60 percent of inhabited atoll islets. A nationwide State of emergency was announced on December 30, 2008 and food security was declared the top priority in the nation.

Climate Change and Agriculture Across FSM States

The above climate effects and vulnerabilities have been summarized by FAO’s vulnerability assessment report “Climate risks, vulnerabilities and impacts of climate change on the agricultural sector in FSM: Assisting Small Island States to Integrate the Agricultural Sectors into Climate Change Priorities and Nationally Determined Contributions⁵⁷ which provides a high level vulnerability assessment for agriculture in the four FSM States.

FAO State Level Vulnerability Assessment for Agriculture in 4 FSM States

			Vulnerability Assessment		
Yap	Stressors	Projected Climate Change Impacts	Sensitivity IDEAL - LOW	Adaptive Capacity IDEAL -LOW	Vulnerability IDEAL -LOW
Agriculture	Earthquakes, Tsunamis, Typhoons Flooding Drought Wildfires High Seas Storm Surges, Human Induced vulnerabilities	<ul style="list-style-type: none"> ▪ Increase in air and sea temperatures up to 3.5°C ▪ Increased ocean acidity (OA) ▪ Reduced frequency of droughts 	HIGH-Agriculture production sensitive to periods of low rainfall, limited groundwater, flooding events associated	MEDIUM- Can address through priority projects under JSAP but costly. Current efforts underway through ‘Ridge to Reef’	HIGH-Although project priorities have been identified and endorsed, institutional efficacy to secure funds and implement adaptation and mitigation priorities are slow and

⁵⁴ IPCC 5th Report; Available at: https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-PartB_FINAL.pdf

⁵⁵ Vulnerability of Pacific Island agriculture and forestry to climate change (2016); Available at: <https://www.spc.int/sites/default/files/wordpresscontent/wp-content/uploads/2016/12/Vulnerability-of-Pacific-Island-agriculture-and-forestry-to-climate-change.pdf>

⁵⁶ Post Disaster Assessments of FSM Outer Islands via Federated States of Micronesia Second National Communication on Climate Change pg. 83; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communication-to-the-UNFCCC.pdf>

⁵⁷ FAO Climate risks, vulnerabilities and impacts of climate change on the agricultural sector in FSM: Assisting Small Island States to Integrate the Agricultural Sectors into Climate Change Priorities and Nationally Determined Contributions (2020); Draft available in Annex 13

		<ul style="list-style-type: none"> Decreased typhoon frequency Decreased frequency of severe storms Rise in sea levels (SLR) up to 60cm by 2070 Land loss via erosion especially in low lying outer islands 	with typhoons, salination of agricultural land, high sea storm surges in outer islands and coastal areas of Yap proper	project focusing on sustainable land management.	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, skilled sufficient labour and supporting infrastructure.
Kosrae	Stressors	Projected Climate Change Impacts	Sensitivity IDEAL - LOW	Adaptive Capacity IDEAL -LOW	Vulnerability IDEAL -LOW
Agriculture	Higher than normal tides Large Sea Swells Increased impact of storm surges Flooding due to SLR Tropical storms Typhoons Drought Landslides Human Induced vulnerabilities	<ul style="list-style-type: none"> Increase in air and sea temperatures up to 3.5°C Increased ocean acidity (OA) Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Rise in sea levels (SLR) up to 60cm by 2070 Land loss via erosion 	HIGH- Agriculture production sensitive to, flooding events associated with typhoons, salination of agricultural land, high sea and storm surges.	MEDIUM- Can address through priority projects under JSAP but costly. Current efforts underway through '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 priorities are slow and challenging. Agriculture Policy as well as food and farming systems do not address the impacts of climate change relating to biodiversity, skilled sufficient labour and supporting infrastructure.
Pohnpei State	Stressors	Projected Climate Change Impacts	Sensitivity IDEAL - LOW	Adaptive Capacity IDEAL -LOW	Vulnerability IDEAL -LOW
Agriculture	Droughts Variable rain patterns Typhoons during El Nino periods Tropical storms High Sea Levels during El Nina Human Induced vulnerabilities	Increase in air and sea temperatures up to 3.5°C More often extreme rainfall days Reduced frequency of droughts Decreased typhoon frequency Decreased frequency of severe storms Increased OA	HIGH- Agriculture production sensitive to, flooding events associated with typhoons, salination of agricultural land, high sea and storm surges	MEDIUM- Can upgrade system through priority projects under JSAP but costly. Current efforts including 'Ridge to Reef' project and Micronesia Challenge Terrestrial project	HIGH-Although project priorities have been identified, they are yet to be endorsed. Despite some favorable projected climate change impacts, institutional efficacy to secure funds and implement adaptation and mitigation priorities

		Rise in sea levels (SLR) up to 60cm by 207	on outer islands.	underway. As the nation's capital State, Pohnpei has the advantage on availability and accessibility of assistance.	are slow and challenging especially given Pohnpei's remote and dispersed outer islands. Agriculture Policy as well as farming systems do not address the impacts of climate change sufficiently with gaps relating to biodiversity, skilled sufficient labour and supporting infrastructure.
Chuuk	Stressors	Projected Climate Change Impacts	Sensitivity IDEAL - LOW	Adaptive Capacity IDEAL -LOW	Vulnerability IDEAL -LOW
Agriculture	Droughts Typhoons Tropical storms High Sea surges in outer islands Human Induced vulnerabilities	<ul style="list-style-type: none"> ▪ Increase in air and sea temperatures ▪ More often extreme rainfall days ▪ Reduced frequency of droughts ▪ Decreased typhoon frequency ▪ Decreased frequency of severe storms ▪ Increased OA ▪ Rise in sea levels (SLR) up to 60cm by 2070 	HIGH- Agriculture production sensitive to, flooding events associated with typhoons, salination of agricultural land, high sea and storm surges on outer islands.	MEDIUM- Can upgrade system through priority projects under JSAP but costly. Current efforts including 'Ridge to Reef' project focusing on SLM. However, the low capacity of the Chuuk State Agriculture Department is an issue.	HIGH-Although project priorities have been identified, they are yet to be endorsed. Despite some favorable projected climate change impacts, institutional efficacy to secure funds and implement adaptation and mitigation priorities are slow and challenging especially given the land ownership issues in Chuuk and its remote and dispersed islands. Agriculture Policy as well as farming systems do not address the impacts of climate change sufficiently with gaps relating to biodiversity, sufficient skilled labour and supporting infrastructure.

Existing impacts on the agricultural sector in FSM include the following:

- There was an 11% decrease in home-produce food consumed by FSM from 2005 to 2014 correlating to a steady decrease in subsistence farming activities from 56.9% in 1998 to 18% in 2005, and 17.2% in 2013 (FSM Household Income and Expenditure Survey, 1998, 2005, 2013).
- This indicates a corresponding reduction in agriculture production from estimated areas of land use for agriculture of 51% in 2005 to 40% in 2014 (or 88,217 acres to 69,038 acres) – FSM Integrated Agriculture Census 2016
- In 2005 46% of the food consumed by FSM households was home produced and 9 years later this dropped to 35%. “Fruits, vegetables and tubers” are still mainly (87.6%) home produced in 2013, only “Meat and Poultry” and especially “Fish and seafood” show lower percentage in 2013 (68% of the “Fish and seafood” consumption was home produced in 2005 and 52% in 2013) -2013 FSM HIES
- Damage to crops - Weather damage was the most reported, with many crops having ten percent (6,903.8 acres) or more land parcels with losses of the crop in 2016. The highest reported rates of damage were to betelnut, breadfruit, piper leaves, banana, coconut, swamp taro, tapioca and sakau all of which had reported weather damage of between 20 and 30 percent (13,807.60 acres and 20,711.4 acres) of parcels of land with the crop –(Integrated Agriculture Census 2016)
- Agroforestry - Trees, shrubs, and herbs are cultivated for food or medicines among a cover of other forest trees. The number of ha has reduced by 28% from 20,072 ha (1983) to 14,429 ha (2006) (Global Forest Resources Assessment 2015 – FSM, FAO)

Please see the table below for further discussion of ongoing climate change impacts to agriculture in FSM.

Ongoing Climate Change in FSM	Ongoing Climate Change Impacts to Agriculture
<p>Since 1993 sea level in the tropical western Pacific has been rising an average of 0.2-0.4in (5-10 mm) per year. For FSM specifically the value is over 0.39 in (10 mm) per year. This is well above the global mean of about 0.12 in (3 mm) per year over the same period.⁵⁸</p> <p>Currently about 97% of high tides are less than 2 meters, but by 2030 and 2050 dangerous high tide events are expected to exceed the 2-meter threshold 12% and 27% of the time respectively due to sea level rise</p>	<ul style="list-style-type: none"> • Increasing soil salinity is the greatest threat to crop productivity on the atolls of FSM. • The majority of agricultural production within FSM occurs in the low-lying areas of the high, volcanic islands (approx. 21,700 ha of land). These areas are increasingly subject to lowland flooding as well as seawater inundation from sea level rise.⁵⁹ • Agricultural lands degraded or washed out due to SLR, soil salinity, tidal surges and the like cover an estimated area of 6,500 ha and affect over 3,300 farmers.⁶⁰ • Close to 100% of the nearly 35 inhabited outer islands in FSM lie within the 2-meter zone of potential sea level rise and within a 5-meter zone of storm surge, and have had to abandon taro patches because of inundation in the past.⁶¹ Examples: <ul style="list-style-type: none"> ○ Saltwater intrusion during tidal surges in 2007 in Yap, led to the mortality of 90% of the taro crop on the islet of Falalop, Ulithi atoll, and 75% of the taro crop on the islet of Falalop, Woleai atoll.⁶²

⁵⁸ Federated States of Micronesia Second National Communication on Climate Change pg. 28; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communication-to-the-UNFCCC.pdf>

⁵⁹ GCF Country Program – Federated States of Micronesia; Available at: <https://www.greenclimate.fund/sites/default/files/document/micronesia-country-programme.pdf>

⁶⁰ FSM Integrated Agricultural Census 2016; Available at: https://spccfpstore1.blob.core.windows.net/digitallibrary-docs/files/a0/a08150f6a7805b5adc38fe751b1dfe16.pdf?sv=2015-12-11&sr=b&sig=nUBxA%2BAX6uUI5cZMfsm993a0L2qAbgW1BSCxxiiQ9Ys%3D&se=2021-07-26T14%3A48%3A28Z&sp=r&rsc=public%2C%20max-age%3D864000%2C%20max-stale%3D86400&rsct=application%2Fpdf&rscd=inline%3B%20filename%3D%22FSM_2016_IAC_200120.pdf%22

⁶¹ FSSLP via FSMNC2; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communication-to-the-UNFCCC.pdf>

⁶² Perkins and Krause, Adapting to climate change impacts in Yap State, Federated States of Micronesia: the importance of environmental conditions and intangible cultural heritage, Island Studies Journal (2018); Available at: <https://doi.org/10.24043/isj.51>

<p>creating significant potential risks for food security and agriculture in FSM.</p>	<ul style="list-style-type: none"> ○ In that same year, approximately 90% of all taro was destroyed in the outer islands of Chuuk, where an estimated 25% of the State’s population resides.⁶³ • Assessment of damage following tidal surges that occurred in 2008 indicated substantial damage to four staple crops (taro, breadfruit, banana, and coconut) in the Chuuk State Islands – particularly the subsistence crops of taro and breadfruit which had severe damage or were fully destroyed.⁶⁴ Roughly half of all households surveyed reported at least a 15-40% loss of their primary dietary staple and source of calories (taro and breadfruit). Additionally, 15% of households reported a complete loss of taro and 10% reported a complete loss of breadfruit.⁶⁵ • 3-22% of households across the four States are already reported issues with sea water as the key factor driving declining agricultural productivity and an additional 5-15% of households highlighted flooding impacts (including from tidal surges).
<p>The ENSO cycle has a profound effect on the distribution of tropical cyclones in the FSM. During El Nino years, typhoons and tropical storms are 2.7 times more likely to occur in the FSM region compared to non-El Nino years.⁶⁶ The formation region of cyclones is also impacted. As is currently observed, during El Nino years, typhoon formation extends eastward resulting in an increased risk of a typhoon for Pohnpei during El Nino years, and a decreased risk during the year following El Nino and during La Nina years.</p>	<ul style="list-style-type: none"> • One of the most comprehensive reviews of climate change and agriculture in the Pacific⁶⁷ highlighted that for most staple food crops (taro, breadfruit, yam, banana, and coconuts), extreme weather events including storm surges and king tides (and the resulting salinization) are already damaging these crops. • According to the FSM Integrated Agricultural Census, in 2016 weather damage was reported as resulting in ten percent (6,903 acres) or more land parcels with losses of crops. The highest reported rates of damage were to betelnut, breadfruit, piper leaves, banana, coconut, swamp taro, tapioca and sakau all of which had reported weather damage of between 20 and 30 percent (13,808 acres and 20,711 acres) of parcels of land with the crop. • In 2015, a preliminary damage assessment (PDA) by USAID evaluating the impact of Typhoon Maysak in FSM found that Typhoon Maysak destroyed at least 90 percent of crops and fruit trees, including staple foods such as breadfruit and taro, in affected areas across both Chuuk and Yap. As a result, approximately 29,000 people in FSM required temporary food assistance. Communities also required assistance with agricultural inputs—seeds, cuttings, and limited hand tools—to facilitate quick replanting. • 5-15% of households already highlight flooding impacts (including from storm surges) as a key factor limiting agricultural productivity.
<p>Annual rainfall in FSM has remained relatively constant with a slight decline across states, with Yap declining an average of 0.31 in (7.9mm) per decade, Pohnpei declining 3.46in (88mm) per decade, and Chuuk</p>	<ul style="list-style-type: none"> • Tropical Storm Chataan struck the islands of Chuuk in 2002. The storm resulted in 500 mm of rainfall in a 24-hour period, which triggered 265 documented landslides. The landslides caused the destruction or damage of 231 structures, including homes, schools, community centers and medical dispensaries. These landslides also buried roads and damaged crops and water supplies. In 1997, two major tropical storms struck the main island of Pohnpei within a small

⁶³ Hezel, F. (2009). High water in low atolls. Micronesian Counselor, 15 March.

⁶⁴ Post Disaster Assessments of FSM Outer Islands Via FSMNC2 pg. 81; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-nd-National-Communiation-to-the-UNFCCC.pdf>

⁶⁵ Sea-Level-Rise Disaster in Micronesia: Sentinel Event for Climate Change?; Available at: https://www.researchgate.net/publication/304554278_Sea-Level-Rise_Disaster_in_Micronesia_Sentinel_Event_for_Climate_Change

⁶⁶ Typhoons in Micronesia – A History of Tropical Cyclones and their Effects until 1914; Available at: https://www.researchgate.net/publication/277964781_Typhoons_in_Micronesia_A_history_of_tropical_cyclones_and_their_effects_until_1914

⁶⁷ Vulnerability of Pacific Island agriculture and forestry to climate change (2016); Available at: <https://www.spc.int/sites/default/files/wordpresscontent/wp-content/uploads/2016/12/Vulnerability-of-Pacific-Island-agriculture-and-forestry-to-climate-change.pdf>

<p>declining 1.93in (-48.9mm) per decade (1950 -2009).⁶⁸</p> <p>With less than 1.5°C between its hottest and coldest months, FSM experiences very little seasonal variation in mean air temperatures⁶⁹.</p> <p>El Nino events in FSM tend to cause droughts. The islands of FSM were severely impacted by drought during El Niño conditions of 1997-1998.</p>	<p>timeframe. These storms triggered more than 30 documented landslides, which caused property damage, including to crops.⁷⁰</p> <ul style="list-style-type: none"> • Drought impacts in FSM tend to be severe when they occur. For example, during El Niño conditions of 1997-1998, insufficient rainfall caused water and food shortages including staples such as taro, coconut, breadfruit, banana, yam, sweet potato, citrus, sugar cane, and others. Communities among the atolls survived because bottled water, food supplies, and reverse osmosis pumps were imported. • A survey undertaken in April 1999 revealed 75% of the breadfruit trees and 68% of the coconut trees were either severely stressed and/or dying as a result of the El Nino induced drought. Meanwhile, taro, the primary source of starch on the affected atoll, was estimated to be at 25% of its pre-drought levels, with importation from other islands needed to make up the deficit.⁷¹ • 2-47% of households already report issues with drought as a key negative driver for agriculture productivity.⁷²
<p>Annual and seasonal maximum temperatures have increased in Pohnpei and Yap since 1951. Maximum temperatures have increased at a rate of 0.32°F (0.18°C) per decade at Pohnpei and at a rate of 0.41°F (0.23°C) per decade at Yap. Also, at Pohnpei, annual and half-year trends in maximum air temperature are greater than those observed in minimum air temperature. These temperature increases are consistent with the global pattern of warming.</p>	<ul style="list-style-type: none"> • Although FSM has experienced a trend of ambient temperature increases and is projected to continue to experience temperature increases due to climate change, to date, there have been no comprehensive studies or evidence gathered that identifies the impacts of ambient temperature increases on crop production in FSM. • This SAP project is focused on addressing the observed climatic impacts on crop production from sea level rise, storm surge and saltwater intrusion, as well as damage from changing precipitation patterns. It is, however, acknowledged that the continued increase in ambient temperature will result in impacts to crops in FSM at a future date.
<p>There is very limited information regarding how climate change will influence pest and disease incidence and distribution, so projections are difficult.</p>	<p>5-12% of households across the States do report issues with invasive species and pests expected to be exacerbated by climate change. However, the information and data for the link between climate change and an increase of invasive species and pests has as of yet not been investigated systematically.</p>

Impacts on Food Security

As a major driver of food security in FSM, the impacts on agricultural systems as described above, are expected to dramatically impact food security in FSM. This will take place primarily through disrupting local food availability and

⁶⁸ Pacific-Australia Climate Change Science and Adaptation Planning Program; Available at: https://www.pacificclimatechangescience.org/wp-content/uploads/2014/07/PACCSAP_CountryReports2014_WEB_140710.pdf

⁶⁹ <https://climateknowledgeportal.worldbank.org/country/federated-states-micronesia/climate-data-historical>

⁷⁰ Federated States of Micronesia Second National Communication on Climate Change; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communication-to-the-UNFCCC.pdf>

⁷¹ Post Disaster Assessments of FSM Outer Islands via Federated States of Micronesia Second National Communication on Climate Change pg. 83; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communication-to-the-UNFCCC.pdf>

⁷² FSM Integrated Agriculture Census 2016 (2020); Available at: http://www.fsmrd.fm/wp-content/uploads/2020/06/200120_FSM_IAC_2016.pdf

production. Overall, the food security assessments, agricultural policy, State specific adaptation plans, and studies synthesized have highlighted the following high-level risks of climate change on food security in FSM:

- **Availability:** loss of arable land from inundation and coastal erosion as a result of sea level rise; increased crop damage and arable land loss from saltwater intrusion and salinization of soils; loss of groundwater resources; destruction of crops and arable land from tidal surges; destruction of crops and cropland from extreme weather (high winds, washouts, flooding, etc.); changes to growing seasons and viability of certain crops; unknown impact on incidence and severity of ENSO impacts (typhoons, sea level rise, high winds, drought, wave action); loss of coastal habitat and potential impact on subsistence fishing and aquaculture; potential increase in incidence of crop blight and pests, particularly for taro.
- **Access:** lower yield leading to high food prices, particularly for locally grown agricultural products, and lower farmer income; increased reliance on imports and other negative coping strategies (slash agriculture, etc.)
- **Utilization:** decreased calorie availability and intake due to loss of subsistence crops; dietary changes and nutritional deficiencies from increased reliance on imported food and loss of subsistence crops; potential changes in pests and water availability
- **Stability:** extreme events, particularly tidal surges and potentially typhoons and droughts from ENSO conditions, can disrupt food storage, access, and availability; abandonment of low-lying islands and sudden added strain on remaining food systems

Overall, by decreasing supply (both acute and long-term), climate change severely exacerbates other food security issues particularly demand for imports, prices of local foods, health impacts and nutrition, and supply stability of subsistence crops. More detail on the adaptive context, and baselines for food security and climate change can be seen in the diagram and narrative in **Annex 13: Pre-Feasibility Study**.

FSM Food Security Climate Baseline

Overview of Food Production, Imports, and Poverty

<p>Agriculture</p> <ul style="list-style-type: none"> Nationally 63% of Households engaged in agricultural activities Subsistence agriculture (76%) Yam, banana, taro, cucumber, tapioca, green coconut, copra, breadfruit, betel nut, cassava, etc. Annual household income from subsistence - \$395 	<p>Livestock</p> <ul style="list-style-type: none"> Nationally 49% of households engaged in livestock activities Pigs - 94% of livestock value Chickens - 5% of livestock value Annual household income from subsistence livestock - \$41 	<p>Fisheries</p> <ul style="list-style-type: none"> 47% of households engage in fisheries activities 91% of households catch reef fish, 27% ocean fish, and 66% crustaceans or other invertebrates Annual household income from subsistence fishing - \$218 	<p>Imported Food</p> <ul style="list-style-type: none"> 17-43% of household diet is imported food Total food imports have been dramatically increasing (\$43.1 million in 2010) Convenience starch foods, including rice, ramen, noodles, flour and bread are the major food items being imported 	<p>Food and Poverty</p> <ul style="list-style-type: none"> Total Poverty Line - \$US 4.34/adult/day 40% fall below at the national level Food Poverty Line - \$US 1.84/adult/day 10% fall below what is needed for a minimum health diet. The poorest income groups allocated more than half of total expenditures on food
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Food Security Status Quo

<p>Availability</p> <ul style="list-style-type: none"> Declining, but significant reliance on subsistence agriculture Increased production of export crops instead of staples Declining agriculture labor Declining soil fertility Loss of traditional knowledge for food systems Lack of farmers crop markets and connectivity between local production and opportunity Growing reliance on imported food 	<p>Access</p> <ul style="list-style-type: none"> Significantly increasing unemployment Decline in agricultural, livestock, and fisheries income Lack of safety nets Growing number of households below food poverty lines High prices for local food vs. imported food Growing issue of landlessness and need for increased production 	<p>Utilization</p> <ul style="list-style-type: none"> Extremely high prevalence of non-communicable diseases, particularly diabetes, heart disease, and chronic obstructive pulmonary disease High prevalence of obesity and vitamin A deficiency Physical inactivity Shifting preferences for imported food Weak monitoring of food supply 	<p>Stability</p> <ul style="list-style-type: none"> Increased risk of flooding and drainage problems for agricultural areas Inability of current agricultural production, storage, and distribution to cope with extreme events, particularly storm surge, high tides, and drought Risks of price shocks and shortages from global oil/commodity prices due to the reliance on imports
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Effects of Climate Change

<p>Sea Level Rise</p> <p>+9 cm by 2030 and +39 cm by 2050.</p>	<p>Increased Sea Temperatures</p> <p>Increase 0.7°C (+/- 0.5) by 2030 and 2.2°C (+/- 0.9) by 2050</p>
<p>Salinization and Erosion of Arable Land</p> <p>Most FSM soils are vulnerable to saltwater intrusion and erosion under SLR</p>	<p>Increased Rainfall and Extreme Events</p> <p>Increase 1% (+/- 7%) by 2030 and increase 9% (+/- 15%) by 2050</p>
<p>Increased Annual Temperatures and Extreme Temperatures</p> <p>Increase 1.4°C (+/- 0.8) by 2030 and 4.2°C (+/- 1.6) by 2050</p>	<p>Increased Frequency and Intensity of Tidal Surges</p> <p>In the 2030s, the high-tide level of 2 m will be exceeded by 12% of all high tides (baseline - 3%).</p>
<p>Expanded Opportunity for Pests and Disease</p> <p>Climate change triggers temperature and rainfall conditions ideal for pest spread</p>	<p>Ocean Acidification</p> <p>3.3 (+/- 0.1) by 2030 and 2.6 (+/- 0.2) by 2050</p>

Climate Change Impacts on Food Security

<p>Availability</p> <ul style="list-style-type: none"> Loss of arable land from inundation and coastal erosion as a result of sea level rise Increased crop damage and arable land loss from saltwater intrusion and salinization of soils Loss of groundwater resources Destruction of crops and arable land from tidal surges Destruction of crops and cropland from extreme weather (high winds, washouts, flooding, etc.) Unknown impact on incidence and severity of ENSO impacts (typhoons, sea level rise, high winds, drought, wave action) Loss of coastal habitat and potential impact on subsistence fishing and aquaculture Potential increase in incidence of crop blight and pests, particularly for taro 	<p>Access</p> <ul style="list-style-type: none"> Lower yield leading to high food prices, particularly for locally grown agricultural products, and lower farmer income Increased reliance on imports and other negative coping strategies (slash agriculture, etc.)
<p>Utilization</p> <ul style="list-style-type: none"> Decreased calorie availability and intake due to loss of subsistence crops Dietary changes and nutritional deficiencies from increased reliance on imported food and loss of subsistence crops Potential changes in pests and water availability 	<p>Stability</p> <ul style="list-style-type: none"> Extreme events, particularly tidal surges and potentially typhoons and droughts from ENSO conditions, can disrupt food storage, access, and availability Abandonment of low-lying islands and sudden added strain on remaining food systems Disruption of global supply chains for food imports

ENSO

- Typhoons
- Tidal Surge
- Drought

Unknown Impacts

Impacts on Availability, Access, Utilization, and Stability

Exacerbates Baseline

Baseline Food Security and Climate Change Diagram

Past Efforts on Climate Change and Food Security

Despite the challenges, FSM has made clear commitments to improving the resiliency of food security, most notably through its National Climate Change Strategy, FSM Strategic Development Plan, National Agriculture Policy, second national communication on climate change, and Statewide Assessment and Resource Strategies (more detail on specific objectives from these policies is included in the Country Ownership section below). The projects proposed activities directly align with and support the objectives of these national frameworks.

There are also a few past and ongoing projects related to food security in FSM that the project will work to leverage and build upon. A more complete list of relevant projects is included in Annex 13 as well in the individual components below. Three main projects are discussed below:

- **Climate Adaptive Agriculture and Resilience Project (CAAR)** - Under a USAID funded program, Pacific American Climate Fund (PACAM), the Climate Adaptive Agriculture and Resilience Project (CAAR) (USD 556,264) was undertaken in Yap. The project deployed a three-pronged adaptation model to enhance the adaptive capacity and climate resilience of coastal communities in Yap. The project's concurrent focus on enhancing food security through traditional crops coupled with nutrient-rich vegetables, promotion of rainwater-harvesting systems and water conservation, and promoting resilient household livelihood opportunities, demonstrated success in bringing together crucial elements needed to reduce vulnerabilities and cope with disasters and climate extremes while embracing the traditional culture. The CAAR project found that restoration agroforestry has great potential for regreening degraded lands in a less expensive and participatory way, creating a basis for improved livelihoods, water provision and sustainable food production. Realizing this potential, the current GCF proposal will leverage the model established by the CAAR project to scale-up the multiple benefits of CSA across FSM refining the exact intervention through targeted research that will be conducted through Component 2. In particular, the CAAR project developed some initial communications/awareness materials for the pilot communities that can be adapted and refined for other communities and the larger scale efforts for food security and climate-smart agriculture envisioned in this GCF project. Further the CAAR project piloted small-scale community gardens as well as some climate smart varieties tailored to communities in Yap, both of which can be incorporated into the GCF project's scaling approach for other islands. Please see Annex 13 for CAAR's final report.
- **Enhancing the Climate Resilience of Vulnerable Island Communities in Federated States of Micronesia**⁷³ – The Adaptation Fund has an ongoing project (USD 9 million 2018 - 2023) in FSM working to build social, ecological and economic resilience of the target island communities of the Federated States of Micronesia and reduce their vulnerabilities to extreme drought, sea level rise and other climate risks through water resource management, coastal resource and development planning, and by promoting gender perspectives and ecologically sound climate resilient livelihoods. The project aims at reducing the vulnerability of the selected communities to risks of water shortage and increase adaptive capacity of communities living in Woleai, Eauripik, Satawan, Lukunor, Kapingamarangi, Nukuoro, Utwe, Malem to drought and flood-related climate and disaster risks. The present project proposal will work to leverage the lessons learned and best practices on community engagement and beneficiary selection, particularly as it relates to designing and communicating interventions based on local understanding of climate risks. Though the AF project is focused on water security/water resource management, and coastal resource development in the outer atoll islands, some of the engagement approaches and lessons learned can be utilized for the present food security interventions on the main islands. Please see Annex 13 for AF's documentation.
- **Coconuts for Life (C4L)**⁷⁴ - C4L is an initiative by FSM Vital Energy (Vital), supported by MCT to rehabilitate the copra industry to support Vital and MCT's commitment to improve the livelihoods of the people of Micronesia. The initiative utilizes a modified Participatory Guarantee System (PGS) Framework. The PGS Model is practiced by many thousands of groups of farmers across the world. It is frequently used to validate the organic status of produce. It is a good 'fit' for pacific island country societies (PICS) and has been

⁷³ Adaptation Fund Enhancing the Climate Resilience of Vulnerable Island Communities in the Federated States of Micronesia; Available at: <https://www.adaptation-fund.org/project/enhancing-climate-change-resilience-vulnerable-island-communities-federated-states-micronesia/#:~:text=The%20overall%20goal%20of%20the,management%2C%20coastal%20resource%20and%20development>

⁷⁴ <https://fsm-data.sprep.org/dataset/coconut-life>

adapted for the social and cultural circumstances in the FSM and the peculiarities of each State. To date, the project has established a total of 60 PGS groups across FSM with a plan to establish another 40-60. The current project will build on the existing PGS business model, which focuses on supporting the most vulnerable farmer groups, particularly those with limited access to land and capital in rural communities. This current project will support the development of 4 State-level farmer's associations. The PGS groups established through the C4L will be the basis for membership to the associations. It will allow for the groups to have a more formalized channel to interact as a cohesive group both at the State and national levels. C4L is working with the main island communities to help all vulnerable and independent household farmers to join a PGS groups or start their own PGS. Please see Annex 13 for further C4L documentation.

Barriers and Challenges

In the face of such dramatic potential impacts, FSM's adaptive capabilities are currently constrained. According to the Notre Dame Global Adaptation Initiative (ND GAIN) FSM is the fourth most vulnerable country to climate change and the 78th least ready country in the world (FSM scored 0.640 on the vulnerability scale and 0.360 on the readiness scale).⁷⁵ The FSM GCF Country Program⁷⁶ concluded that at present, none of the FSM States have a 'high' level of adaptive capacity required to ensure adaptation to the effects of climate change. Despite some variation in their adaptive capacities, all States are highly vulnerable due mainly to a combination of capacity issues to respond to climate impacts in a timely manner and the wide dispersion of the islands in the FSM which poses transportation, communication and development challenges for the nation, particularly for costs of goods and services, costs of energy and transportation, and scalability and connectivity of markets.⁷⁷ Further, institutional capacity to secure sufficient funds and implement coordinated adaptation and mitigation projects is also inadequate, making progress slow and challenging. This makes those living in rural areas, outer islands, and coastal communities especially vulnerable, given the long distances, at times unfavorable weather, logistics and challenges with the high cost of inter-island transportation making it particularly difficult to deliver assistance and implement projects. Given this there is a great need for investment and innovation to improve readiness and a great urgency for adaptation action.

The Integrated Agriculture Census⁷⁸ highlights specific challenges for food security. Reported barriers indicate where farmers see a need for investment for development. The most commonly reported barriers to any further activity were: Lack of production inputs; Lack of source of finance; Lack of management skills; Lack of market to sell produce; and Lack of new tech and infrastructure addition to the risks outlined above, the Second National Communication on Climate Change highlights insufficient investment in agriculture, lack of relevant policy, weak data, limited market information systems and infrastructure, the high cost and low status of local food compared with imported food, and limited interest of youth in agriculture as significant barriers undermining food security and the resiliency of the agriculture sector.⁷⁹ Climate change will affect and exacerbate these factors to further erode food security (see Annex 13). Additionally, the Second National Communication for FSM also identified 3 key gaps in vulnerability assessment and adaptation planning in FSM:

1. No comprehensive understanding of vulnerability to climate change at National, State, island or community levels;
2. Assessments are not being informed by the results of formal analyses of current let alone future risks; and
3. Identification of appropriate adaptation measures remains at a very generic level.

⁷⁵ ND GAIN Country Index; Available at: <https://gain.nd.edu/our-work/country-index/>

⁷⁶ FSM GCF Country Programme; Available at: <http://www.dofa.gov.fm/wp-content/uploads/2018/12/FSM-GCF-Country-Program-Endorsed.pdf>

⁷⁷ Pacific Possible: Long-term Economic Opportunities and Challenges for Pacific Island Countries. World Bank, Washington, DC.; Available at: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/168951503668157320/pacific-possible-long-term-economic-opportunities-and-challenges-for-pacific-island-countries>

⁷⁸ FSM Integrated Agriculture Census 2016 (2020); Available at: http://www.fsmrd.fm/wp-content/uploads/2020/06/200120_FSM_IAC_2016.pdf

⁷⁹ Federated States of Micronesia Second National Communication on Climate Change; Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communiation-to-the-UNFCCC.pdf>

USAID also recently published a Financial Assessment of Climate Change and Disaster Risk for FSM and identified several key barriers and challenges⁸⁰:

- Lack of government coordination, strategic direction, and priorities for adaptation integrated into FSM's current national policy framework
- Lack of true mainstreaming for climate change considerations into national policy. The national agriculture policy was specifically highlighted as an area that is due to be updated
- Estimated costing for operationalizing climate change policies and action at the State and local level currently far outweighs department budgets
- One off projects not formalized or monitored through State and national governments leading to fragmented climate financing
- FSM does not have a central mechanism for the collection and dissemination of climate change related information, particularly for localized and State level information
- Limited private sector engagement in climate change planning
- Lack of capacity in national and State governments to effectively coordinate climate finance and adaptation priorities
- Limited ability to build and sustain local capacity in a manner that is consistent and builds corporate knowledge

A Performance Audit on the Management of the Impacts of Climate Change on Food Security was conducted in the FSM for Fiscal Year 2010 - 2012. The objective of this audit was to assess the effectiveness of the actions taken by key agency/agencies in developing and implementing strategic action plans to address the impacts of climate change on food security in the FSM. The audit found that poor policy and planning by R&D and OEEM had led to minimal action. What has been done had been uncoordinated and inefficient with no assessment of whether the action is achieving improved food security. Specifically, the Auditor found that there was:

- No Comprehensive Action Plan to Address the Impacts of Climate Change on Food Security. The FSM Department of R&D, in consultation with OEEM, was recommended to develop and implement a comprehensive Food Security Plan that complies with the food security policy and mainstreams the impact of climate change. This recommendation was made in 2012 but remains valid in 2020.
- Inadequate food security policy (Agriculture policy). R&D was recommended to develop and implement a Food Security Policy to address the impact of Climate Change on food security. The policy should include the following: Climate Change Impact on Food Security; actions to address the vulnerabilities; responsibilities to coordinate actions to implement the policy and implement individual actions; and, mechanisms for managing national-State consultation and coordination.
- Duplication of efforts/overlapping activities between national and State as well as non-government organization (NGOs). The designated person to coordinate and monitor climate change/food security related activities and should assess whether the efforts administered by the national, State, communities, agencies, NGOs overlap and recommend that the budget for those activities be put into more productive use. Furthermore, the National should coordinate well with the State and NGOs in terms of planning to avoid any overlapping activities and should record all projects/programs to readily identify and avoid repetitive and overlapping activities.

A separate FAO vulnerability assessment report⁸¹ highlights that all States are vulnerable to climate change impacts in the agriculture and fisheries sector as they are exposed to a number of climate related stressors and are sensitive to these stressors and projected climate impacts. Their vulnerability ranges from medium to high as none of the four States have the required 'high' level of adaptive capacity to ensure adaptation to the effects of climate change. Despite some variation in their adaptive capacities, 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 is inadequate, making progress slow and challenging. This makes those living in rural areas, outer islands, and coastal communities especially vulnerable, given the long distances, at times unfavorable weather, logistics and challenges with the high cost of inter-island transportation making it particularly difficult to deliver assistance and implement

⁸⁰ FSM Climate Change and Disaster Risk Finance Assessment; Available at: <https://fsm-data.sprep.org/dataset/fsm-climate-change-and-disaster-risk-finance-assessment-%E2%80%93-2019>

⁸¹ FAO Climate risks, vulnerabilities and impacts of climate change on the agricultural sector in FSM: Assisting Small Island States to Integrate the Agricultural Sectors into Climate Change Priorities and Nationally Determined Contributions (2020); Draft available in Annex 13

projects.⁸² The FAO report further concludes that “the critical issue is the need for adequate financing and incentives to encourage investment. FSM agriculture sector will require dedicated and sustained financial resources if there is to be transformational change to put a nation on a climate resilient footing.”⁸³

The current project, “Climate resilient food security for farming households across the Federated States of Micronesia (FSM)” will therefore address the key barriers and challenges to food security in FSM, summarized as follows:

1. Lack of de-scaled and locally available data on risks and impacts of climate change constrains opportunities for effective agriculture decision making in local communities
2. Significant lack of technical knowledge and capacity in climate-smart agriculture policy, planning, and techniques for both government actors and vulnerable households
3. Weak enabling environment for government and community uptake of climate-smart agriculture and planning
4. Fragmented approach to project-development and coordination for agriculture, food security, and climate change
5. Instability of food supply due to extreme events and the growing effects of climate change, particularly sea level rise and the salinization of arable land
6. Instability of international food supply chain due to pandemic outbreaks (as demonstrated by current COVID-19 pandemic⁸⁴) as well as potential disruption due to other extreme climate related disasters.
7. Underdeveloped market opportunities and value streams for households
8. Declining availability of local agriculture due to declining production, declining soil fertility (i.e. salinization and flooding), agricultural labor, and a growing reliance on imported food

The project will utilize CSA to address identified climate risk. CSA is defined as an approach that helps to guide actions needed to transform and reorient agricultural systems to effectively support development and ensure food security in a changing climate.⁸⁵ It is designed to increase productivity (i.e., produce more food and boost local incomes), enhance the ability of communities to adapt to climate change and weather extremes, and decrease greenhouse gas (GHG) emissions from food production.⁸⁶ When implemented in an island context, CSA can also support benefits to coastal ecosystems (e.g., by reducing sediment into the coastal zone through taro swamps, reducing pressure on wild-caught fisheries, reducing pollutants from fertilizers).⁸⁷ For the purposes of this particular project, the focus is on terrestrial crops as such, CSA packages deployed through this project will integrate traditional and modern CSA practices maximizing the use of natural processes, enhancing the diversity of production, and tailoring production intensity to the capacity of the selected landscape. Improving soil health and crop diversity and the important components of traditional farming systems can make a significant contribution to resilience and, at the same time, enhance adaptive capacity to better manage future challenges.

B.2. Project/Programme description (max. 1,000 words)

Motivation Summary

Overall, the project is working to proactively respond to climate change and its impacts on agriculture and food security. The agriculture sector is informal in FSM, and this is reflected in the lack of established markets and lack of strategic planning for agriculture at the national, State, and local level of governance. Despite this, it is a critical activity for most households in FSM. Alongside increasing urbanization, high local food costs from limited supply and markets, changing consumer preferences, loss of traditional agricultural knowledge, etc., the underdeveloped agriculture sector is a primary driver for food insecurity as it relates to access, availability, utilization, and stability. Climate change is set to exacerbate these underlying issues primarily by damaging crops, increasing losses, and reducing productivity, yields, and available supply of local food through primarily SLR, storm surge, king tides, and salinization in the short-term with additional potential impacts from temperature, precipitation, and pests over the

⁸² FAO Climate risks, vulnerabilities and impacts of climate change on the agricultural sector in FSM: Assisting Small Island States to Integrate the Agricultural Sectors into Climate Change Priorities and Nationally Determined Contributions (2020); Draft available in Annex 13

⁸³ FAO Climate risks, vulnerabilities and impacts of climate change on the agricultural sector in FSM: Assisting Small Island States to Integrate the Agricultural Sectors into Climate Change Priorities and Nationally Determined Contributions (2020); Draft available in Annex 13

⁸⁴ Assessing the Impact of COVID-19 on the Federated States of Micronesia Economy; Available at: https://pitiviti.org/news/wp-content/uploads/downloads/2020/06/FSM_EconImpact_COVID-19_June2020_Web.pdf

⁸⁵ FAO. [Climate-Smart Agriculture](#). Last Accessed 07 January 2021.

⁸⁶ Steenwerth, K. L., Hodson, A. K., Bloom, A. J., Carter, M. R., Cattaneo, A., Chartres, C. J., et al. (2014). Climate-smart agriculture global research agenda: scientific basis for action. *Agric. Food Sec.* 3:11.

⁸⁷ FAO (2010). *Pacific Food Security Toolkit: Building Resilience to Climate Change - Root Crops and Fishery Production*. Rome: Food and Agriculture Organization of the United Nations.

longer horizon. The project will target all farming households on the main islands of FSM (Pohnpei, Chuuk, Kosrae, Yap).

The findings from the various agriculture and climate change reports discussed above have underscored the importance of promoting sustainable cropping systems across the Pacific that maximize the production and use of traditional crops, including the maintenance and strengthening of traditional Pacific agricultural practices. This is critical for future food security in the Pacific and is an important climate change adaptation measure. Linked to this is the urgent need to strengthen research into more varied processing and value-adding techniques so that staple food crops can be more easily used and marketed. Further, that adaptation options and their supporting policies need to be integrated into government programmes in the agriculture and forestry sectors and implemented by institutions in direct contact with farmers, tree growers and communities.⁸⁸

Various assessments of FSM have highlighted the need to improve coordination, policy, and planning for agriculture and climate change, enhance localized climate change data to support agriculture decision-making, build technical capacity to support local farmers, improve local production and stability of food supply, and catalyze the development of local value chains for agriculture.

The project will therefore work to improve technical capacity and coordination for CSA planning and policy, support improved decision-making for agriculture through downscaled climate information, increase availability, stability, and accessibility of locally grown food for food security, improve nutritional outcomes for vulnerable households, develop new opportunities for income and household productivity, and strengthen climate resilient value chains across the agriculture sector by implementing three interrelated components:

1. **Establishing an enabling environment for adaptive action and investment:** This includes institutional coordination, undertaking descaled integrated vulnerability assessments, incorporation of climate change into State and national planning and policy, developing a network of farmer associations, and disseminating tailored communications for informed decision-making. These outputs will specifically help to better target adaptation investments based on community-level vulnerabilities, improve technical capacity for climate smart planning and policy, cement political commitment and accountability for CSA, and drive informed decision-making for farmers, all of which will increase the adaptive and anticipatory capacity of FSM and lay the foundation for improved strategic planning for food security and climate resiliency.
2. **Enhancing the food security of vulnerable households by introducing CSA practices:** (establishing agroforestry systems, capacity building for extension agents, awareness building and training for FSM households, and developing reserve capacity for climate disruption). This will increase availability, stability, and accessibility of locally grown food for food security, improve nutritional outcomes for vulnerable households, develop new opportunities for income and household productivity, and drive a national change in awareness and utilization of CSA for improved resiliency.
3. **Strengthening climate-resilient value-chains and market linkages across the agriculture sector** (development of new markets for local agriculture, enhanced food processing and preservation, and increasing awareness and consumption of local food). This will strengthen climate resilient value chains across the agriculture sector, improve food security gaps through storage and processing, significantly transform opportunities for improved livelihoods thereby driving increased adaptive capacity, and create a strong incentive framework for local farmers to leverage CSA packages beyond the life of the project to secure a long-term shift towards improved climate resiliency with regards to food security.

All together these interventions will increase the resilience of FSM's most vulnerable communities to food insecurity in the face of climate change. Each component and how they are interconnected is outlined below, and additional details can be seen in the project logframe and **Theory of Change in Annex 14**.

Causal Pathways of Proposed Interventions

Given the need for building resilience to climate risks as they relate to food security, the proposed interventions envision three main interlinked causal pathways. The first intervention (Component 1) of the proposed project is to establish an enabling environment for adaptive action and investment, including conducting de-scaled integrated vulnerability

⁸⁸ Vulnerability of Pacific Island agriculture and forestry to climate change (2016); Available at: <https://www.spc.int/sites/default/files/wordpresscontent/wp-content/uploads/2016/12/Vulnerability-of-Pacific-Island-agriculture-and-forestry-to-climate-change.pdf>

assessments, which should allow for tailored climate-smart adaptation strategies to be utilized when introducing CSA practices to households (Component 2). The specific tailored measures for climate adaptation will create an effective pathway for deployment in local communities. To deploy tailored measures the second intervention (Component 2) builds capacity for government agencies and institutions to actually promote, leverage, and support climate adaptation and CSA at the local level. Through these interventions, opportunities and trainings, households will improve agricultural production and thereby food security (access, availability, and stability).

The third intervention (Component 3) will allow for the development of new opportunities for market access thereby increasing farmer incomes and consumption of local food, engaging private sector models for adaptive agriculture practices, creating new pathways and reserve capacity for severe climate disruptions, and strengthening awareness of the benefits of local food. Therefore, the pathways created by the interventions of this project aim to increase the resilience of FSM's most vulnerable communities to food insecurity in the face of climate change.

Component 1. Establish an enabling environment for adaptive action and investment

Component 1 works to address some of the principal gaps and barriers for climate adaptation in the agricultural sector identified for FSM including the lack of capacity at the State and national level, lack of integration of climate change in national strategy and development priorities, and the lack of descaled climate information for government and household decision makers. Component 1 will build on several assessments and studies already undertaken to complement and build upon the evidence base for introducing appropriate adaptation measures.

Through development of national coordination mechanisms, recommendations and guidance material on national policies and regulation, and a training curriculum for national/State level stakeholders on climate change and agriculture the project is creating an enabling environment for food security planning, strategy, and action in FSM. Further, one of the weaknesses of FSM's current agriculture policy as well as other land use policies and regulations is that climate risk and climate change adaptation have not been fully integrated. As highlighted by the Pacific Adaptation Strategy Assistance Program (PASAP) (below), the integration of climate change risk considerations needs to be integrated at both the national and State levels in FSM. By cementing CSA into State and national agriculture policies, FSM can support improved action on food security both through this project and beyond.

The vulnerability of FSM food security and agriculture to climate change needs to be better understood. In terms of data availability, there exists a reasonable baseline of research undertaken in food security, but there is yet to be a nation-wide examination of how the food sector will be affected by climate change to provide an adequate evidence base to inform adaptation measures. It is important that this examination consider the links between the urban, rural and neighboring or outer islands. There is also scope for additional research to strengthen data to inform adaptation responses to build on assessments already conducted as part of FSM's Second National Communication. To this end, Component 1 conducts vulnerability assessments to generate specific actionable information for targeting, prioritizing, and selecting project beneficiaries and project intervention sites. This component will also allow for the gathering of baseline data for staple crops in FSM (taro, yam, breadfruit, banana, and coconut), which currently do not exist. This in turn makes modeling the future climate change impacts on crop yields difficult. This gap will not only fill data needs for this particular intervention, the results will help FSM inform future food security planning and the crop yield models developed can form the basis for undertaking such work across the Pacific.

Information on weather patterns, storm systems, and seasonal predictions exists and are disseminated to each of the FSM States. The main challenge, however, is that the information does not reach local communities and farmers in a timely manner and in an understandable format to assist households in making informed decisions about their crops.

Finally, existing cooperatives for farming are limited and widely dispersed making the sector even more decentralized and hindering dissemination of information and best practices to individual households.

Component 1 will build on several assessments and studies already undertaken to complement and build upon the evidence base for introducing appropriate adaptation measures. Australia's Pacific Adaptation Strategy Assistance Program (PASAP) and the Secretariat of the Pacific Community (SPC) supported a two-year research project in FSM to help secure the nation's food resources against the impacts of climate change. The next steps highlighted at the conclusion of the PASAP support were as follows:

- integrate climate change risk considerations into coastal management policies
- include community-based adaptation activities in land-use policies

- conduct further research into the impacts of climate change on food systems
- include atoll and rural communities in climate-action projects
- protect agroforestry and mangrove areas
- develop climate-change and food-security awareness and education campaigns
- collate and update geographic data to allow for better informed environmental and developmental management decisions.

Outputs 1.1 – 1.3 focus on developing a State/national level enabling environment through improved national coordination, specific policy changes, and targeted climate change vulnerability assessments. Projections of the possible changes in climate in the Pacific Islands region often apply to the region as a whole and not to specific countries, because the grid squares in General Circulation Models are between 200 and 600 km², which provides insufficient resolution for the land areas of almost all the Pacific Islands.⁸⁹ As above these interventions will help to create an enabling environment to support and target the household/community level interventions envisioned in Components 2 and 3. This is especially important in FSM where most of the local authorities have extremely limited capacity and resources to strategically plan or target interventions and therefore rely on the direction/priorities of the State resources that specifically support them – mainly the State agriculture offices in this case.

Component 1 will also develop and strengthen farmer cooperatives across FSM. This will not only provide a means to disseminate available information but will create channels whereby other activities and training can be conducted and will build networks across States. Creating greater connections across the States is a major part of the strategy to build resilience through cooperation and relying on domestic food sources in cases of disaster or prolonged drought, etc. Cooperatives will also support the sharing of innovation and undertaking of activities as part of Components 2 and 3.

For the improved climate communications on agriculture (1.5), the envisioned project output will focus on leveraging and improving the existing climate information processes, information and capacity to better support tailored communication for CSA interventions. Currently this information is not always presented in a way that is useful to local farmers in making specific decisions for agriculture. Specifically, the project will first build additional technical capacity for developing these tailored communications within the National Department of Environment, Climate Change & Emergency Management (DECCEM). With new capacity embedded, the project will leverage the information developed through the integrated vulnerability assessments from Output 1.2 and CSA communications (2.1), alongside the existing weather/climate information streams outlined above to inform development of targeted communications materials for CSA and farmers. These communications will then be shared through existing dissemination channels and opportunities to more specifically support last-mile communications will be developed through the establishment of formal/informal networks for dissemination as part of the development of local markets, farmers' associations, etc.

For background, each State currently has their own weather station that receives weather information (daily weather forecasts, long term drought/weather forecasts, weather advisories, storm watches, warnings, etc.) from the US NOAA National Weather Service Office in Guam. This information is then relayed to each FSM State Disaster Coordination Office (DCO) including the National Department of Environment, Climate Change & Emergency Management (DECCEM), Disaster and Emergency Management office. Each DCO disseminates this information through radio broadcasting stations, social media, and word of mouth. The DECCEM Disaster and Emergency Management Office manages this response and coordinates with each State DCO to make sure they are getting and sharing updated weather forecasts and that the information is being properly disseminated. DECCEM also receives tsunami warning and updates from the Pacific Tsunami Center in Hawaii.

Specific outputs and activities for this component are:

- 1.1 Institutional coordination mechanism established
 - 1.1.1 Develop guidelines and a protocol to facilitate process for planners and researchers engaged in the development of the agriculture policy at both the National and State levels

⁸⁹ Barnett, J. Dangerous climate change in the Pacific Islands: food production and food security. *Reg Environ Change* 11, 229–237 (2011). <https://doi.org/10.1007/s10113-010-0160-2>

The project will convene planners, policymakers, and researchers to establish bylaws and a protocol for how to integrate climate change considerations and climate information into the National Agriculture Policy and the equivalent policies at the State level. The resulting output will facilitate coordinated national decision making on agriculture that effectively incorporates the risks and opportunities of climate change across the agriculture sector.

1.1.2 Convene a national coordinating mechanism to oversee research plan and policy development

Based on and alongside the protocols established above, this activity will convene a national coordinating mechanism made up of key policymakers, researchers, and representatives from civil society to ensure the effective direction of research to support national priorities for climate change and agriculture and to oversee a research plan and policy development. R&D is already mandated to ensure that all research work areas under their jurisdiction is coordinated, as will be the case with the national coordinating mechanism.

1.2 Targeted climate change assessments conducted

1.2.1 Undertake integrated vulnerability assessment for the agriculture sector across FSM's four States⁹⁰ combining criteria for climate impacts including arable land loss, saltwater intrusion, tidal surge risk, and the use of traditional agricultural practices.⁹¹

Collaboration with researchers, State level institutions and policymakers, and local communities to undertake and publish integrated vulnerability assessments for agriculture and climate change across the four FSM States. The assessments will identify and map potential impacts from climate change including arable land loss, saltwater intrusion, tidal surge risk, and the use of traditional agricultural practices. This activity will build on information that is being collected for the Third National Communication by R&D and DECEM by utilizing specific data related to agriculture. Sea-level rise is also a missing input in the current assessments that will be added through this activity.

1.2.2 Provide de-scaled assessments of the vulnerability of communities on FSM main islands, ensuring sex and age disaggregated data collection, to provide the information required to ensure appropriate interventions are introduced (linked to 2.2 and 2.3).

This activity will use the State-level vulnerability assessments developed in 1.2.1 to develop descaled assessments at the community level, the assessment will target all local communities across the 4 main islands of FSM (140) and will guide the development and deployment of appropriate climate interventions are introduced (linked to 2.2 and 2.3). These de-scaled IVAs will also provide much needed localized data to inform the development and implementation of other climate change projects across FSM

1.2.3 Gather baseline data for staple crops in FSM (taro, yam, breadfruit, banana, and coconut) and model climate change impacts on future crop yields for 2050 and 2090.

Currently, baseline crop data does not exist across FSM or most PICs, which prohibits the modelling of climate change impacts on future crop yields. This activity will develop the baseline for the countries staple crops and enable the projection of climate change impacts on future crop yields. These results will help inform future food security planning in FSM and the region.

1.3 Climate change integrated into National and State policy making and planning, particularly in the agriculture sector

⁹⁰ The activity will utilize the Integrated Vulnerability Assessment (IVA) Framework for Atoll Islands, developed in collaboration with SPC, SPREP and GIZ (2016). The IVA framework utilizes a sustainable livelihoods-based approach that combines the assessment of vulnerability to both climate change and disasters.

⁹¹ The term 'integrated' implies the integration between sectors, scales, disciplines and space. A continuous and dynamic process of decision-making linked at multi-levels and scales are implied to reflect the long-term iterative learning that is necessary to successfully adapt to climate change. The IVA framework will be modified to respond to food security while remaining committed to an integrated agenda.

- 1.3.1 Develop targeted recommendations and policy guidance material on the integration of the impacts of climate change and adaptation, including provisions for potential global pandemics of airborne infectious disease, into FSM's National Agriculture Policy.⁹²

Based on the vulnerability assessments (1.2.1) this activity will develop specific recommendations for ensuring that climate change and adaptation considerations are mainstreamed into the National Agriculture Policy. These recommendations will be utilized as part of the coordination mechanism and protocol developed in 1.1.1. Recommendations will include such measures as a government mandate that only locally grown food will be provided to students and patients at local hospitals (to the extent possible taking into account individual dietary needs and restrictions) as part of FSM's efforts to ensure sustainability of demand.

- 1.3.2 Develop overall program for agricultural sector climate change risk reduction awareness building including: (i) development of training curriculum on climate change risk awareness, particularly as it relates to food security (4 pillars) and planning for CSA for national and State-level policymakers and agencies and (ii) develop website for facilitated knowledge and information exchange.
- 1.3.3 Use assessments in 1.1 to ensure each State agriculture policy/regulation incorporates climate risk and takes into account (a) effects of sea-level rise (SLR) and rising temperatures; (b) restoration of degraded lands; (c) farm relocation; (d) improved pest and disease management; and (e) crop management strategies

1.4 Develop network of State-level farmer associations across FSM⁹³

- 1.4.1 Establish and support State-level farmer associations (one for each FSM State) in communities to include both women and men and designate group leaders to receive and coordinate training on CSA, provide information related to climate change impacts and risks, organize a central farmer's market, and run sustainable seed banks and nurseries (2.1). Members and leadership for the associations will volunteer from the PGS groups.

This activity will establish 1 State-level farmer association in each State (4 total). The four State-level associations will represent the approximately 100 PGS groups that have (or are in process of being) been established through the Coconuts for Life program (C4L). Leadership for the associations will be drawn from these PGS groups and will seek to ensure both women and men are members of the leadership and management of these associations. A community process will be undertaken to determine the leadership composition of the State-level farmer's associations (see Annex 12 which includes the Stakeholder Engagement Plan). The State-level associations will serve as the central entity for conducting training and outreach to local farmers (i.e. 1.4.2, 1.5.5, 2.2.3, 2.5.3, 3.2.2, 3.3.2), and a conduit for the dissemination of climate information (i.e. 1.2.1, 1.2.2, 1.5.1, 1.5.3, 1.5.5) and CSA practices (i.e., 2.1.1, 2.13).

- 1.4.2 Set-up and license each State-level farmer's association as a private entity. Provide training on leadership, management, and capacity building as well as technical training for association leaders (equally provided to women to ensure women are proactively part of decision making).

This activity will work to secure registration and licensing of the State-level farmer's association, support the development of a business plan, and provide training on financial management, organizational, and CSA (equally provided to women to ensure women are proactively part of decision making)

- 1.4.3 Create a forum and practice for knowledge sharing and innovation exchange across State-level farmer associations in all four States.

⁹² This mostly focuses on proactive responses to events like COVID-19 which have increased vulnerability for FSM's households and logistics chains. The ongoing global pandemic is projected to have consequences for the FSM economy over the coming years. Construction, transportation and communications and the tourism sectors are estimated to shrink for at least the next fiscal year. Overall GDP is expected to decline by approximately 5% over fiscal year 2020 and 2% over fiscal year 2021. All of this affects expenditures for the agriculture sector which directly impacts food security. Assessing the Impact of COVID-19 on the Federated States of Micronesia Economy; Available at: https://pitiviti.org/news/wp-content/uploads/downloads/2020/06/FSM_EconImpact_COVID-19_June2020_Web.pdf

⁹³ To be modelled after the Marine Protected Area (MPA) network and brought under the Protected Area Network (PAN) structure.

This activity creates connectivity amongst the newly established State-level associations (1.4.1) to enable better knowledge management and innovation exchange for CSA best practices. Analysis of current applications used for smart phones will be undertaken and a determination of what might be useable across FSM will be made with the potential to tailor an application for FSM's specific needs. The forum itself can be done via a website or potentially through the aforementioned smart phone application. Additional meetings and physical exchanges between associations and their leaders will also take place. This will be the first of its kind forum of farmers across the entire Nation.

1.5 Develop and disseminate tailored communications materials leveraging existing climate information streams to support CSA interventions

1.5.1 Technical assistance for DECEM to support expanded communications capacity with respect to dissemination of climate forecasts and tailored communications to farmers (1.5.2)

DECEM currently has a communications position on staff. However, the agency does not currently provide information to farmers. This activity will bring in expertise about how best to communicate climate forecasts and projections to the community level. Current staff at DECEM will be trained to ensure the agency has new communication capacity to sustain ongoing efforts to deliver climate information throughout the climate-smart agricultural value chain.

1.5.2 Utilize the integrated vulnerability assessments from Output 1.2, CSA communications (2.1) and existing weather/climate information streams currently relayed to DECEM (NOAA Regional Weather Service, Pacific Tsunami Center and Guam Area Office), to inform development of targeted communications materials (newsletters, SMS texts, Whatsapp, radio broadcasts) for CSA and farmers including parameters like seasonal rainfall, drought events, etc. tailored to the needs and priorities of local operational areas

This activity will leverage the information developed through the integrated vulnerability assessments from Output 1.2 and CSA communications (2.1), alongside the existing weather/climate information streams outlined above to inform development of targeted communications materials for CSA and farmers. These communications will then be shared through existing dissemination channels and opportunities to more specifically support last-mile communications that will be developed through the establishment of formal/informal networks for dissemination as part of the development of local markets, State-level farmers' associations, etc.

1.5.3 Improve DECEM's existing channels for climate information in FSM through radio broadcasts and social media to support effective dissemination of developed communications materials to local communities and State-level farmer associations including establishing informal/formal community networks through the four State-level farmers associations established under output 1.4. The State-level farmers associations will be the hub for relaying and sharing information to last mile households

DECEM currently posts weather information via radio and social media (i.e., Facebook), however, these messages are not tailored for farmer's needs. This activity will use the same channels currently utilized by DECEM to issue targeted communications (developed under 1.5.2). The activity will also use the State-level farmers associations as a hub for relaying and sharing information to last mile households.

1.5.4 Develop trainings and guidance materials for State-level farmer's associations (1.4) and households on utilizing localized communications materials (1.5.2) to support informed decision making for CSA.

The trainings will be designed to ensure that households are able to utilize the localized communication materials to effectively manage their farms and gardens through climate-smart practices.

Component 2. Enhance the food security of vulnerable households by introducing climate-smart agriculture practices

Component 2 will build on the research conducted under Component 1 as well as successful interventions that have been undertaken in specific targeted communities on Yap and Chuuk. One of the main lessons from these smaller projects is that because of the diverse geographic and topographic nature of FSM, different targeted interventions need to be introduced and the appropriate interventions will depend heavily on the local circumstance of specific communities.

The Climate Adaptive Agriculture and Resilience Project (CAAR) deployed a three-pronged adaptation model to enhance the adaptive capacity and climate resilience of coastal communities in Yap State. The project's concurrent focus on enhancing food security through traditional crops coupled with nutrient-rich vegetables, promotion of rainwater-harvesting systems and water conservation, and promoting resilient household livelihood opportunities, demonstrated success in bringing together crucial elements needed to reduce vulnerabilities and cope with disasters and climate extremes while embracing the traditional culture.

The CAAR project found that restoration agroforestry has great potential for regreening degraded lands in a less expensive and participatory way, creating a basis for improved livelihoods, water provision and sustainable food production (final report for CAAR included in Annex 13). Realizing this potential, the current GCF proposal will work to scale-up the multiple benefits of CSA across FSM refining the exact intervention through targeted research that will be conducted through Component 2.

Suitable crop varieties that are grown throughout the main and outer islands of FSM are known due to traditional knowledge and ongoing agroforestry practices. These include the staple crops of taro, yam, breadfruit, banana, and coconut. Additionally, there is a large amount of literature available on cultivation practices, known pests and diseases, harvest/processing techniques, market data and other information for these crop varieties, which the proposed project will be able to utilize.⁹⁴ COM-FSM has also been awarded various grants to implement small scale agricultural projects throughout FSM through the United States Department of Agriculture's Sustainable Agriculture Research and Education (SARE) program. These have included projects on soil improvement, pest control methods, and sustainable gardening to address issues from projected climate change.⁹⁵ As the main implementing entity for Component 2, COM-FSM will build on capacity and knowledge gained from these previously implemented projects as well as utilize existing traditional knowledge and literature on crop cultivation in FSM. An initial assessment of appropriate climate resilient agriculture practices and suitable cultivars alongside specific climate rationale and two case studies are included in the Pre-Feasibility study (Annex 13) and summarized below:

- Introduction of climate resilient species and varieties (particularly drought/salt-resistant/inundation resistant crop varieties for staple crops and others to respond to the primary climate drivers of salinization and storm surge. These varieties also tend to be more resilient/responsive to other impacts like temperature).
- Enhanced farming and land use techniques facilitating soil and water conservation (this includes techniques for managing potential water/drought stress, salinization and inundation)
- Promote traditional farming systems/agroforestry (this includes methods for creating community plots and other techniques to improve the production capacity of used and unused lands, particularly plots integrated into traditionally less productive higher elevation forest areas)
- Restoration of barrier species (this includes strategic planting to help protect against salt spray, rising salinity levels in soils and potential inundation from storm surge and king tides)
- Organic farming techniques (this helps to improve productivity of farms while preventing soil degradation, particularly from salinization. It also reduces the utilization of fertilizer for farming households)
- Integrated management approaches including proactive drought management, integrated pest management, integrated crop management, and integrated vector management (this mostly focuses on proactive and adaptive management of potential issues from pests as well as yield improvement/protection for drought events through joint-planning at the national level, participatory planning through farmer cooperatives, location-specific short term and medium term response to drought, etc.)
- Enhanced food storage and processing techniques (this focuses on improving shelf-life and longevity of food production in FSM which helps to mitigate some risk of loss of production, but also provides for bridging

⁹⁴ University of Hawaii at Manoa – Traditional Pacific Island Crops; Available at:

<https://guides.library.manoa.hawaii.edu/paccrops/home>

⁹⁵ Sustainable Agriculture Research & Education – Western region grants; Available at: https://projects.sare.org/search-projects/?sort=y&num=&pt=&rpt=®=21&st=FM&g=0&yl=1988&yh=2020&com=&pr=&search_action=Search&page=0

capability in response to climate impacts, particularly from acute events like droughts, storm surge and king tides)

The interventions are focused on households and communities because that is where the vulnerability is most present. Further unlike in some other food insecurity countries, particularly in SSA, individual households really make the decisions on planting and farming (i.e. which crops, when, etc.) and there is no national agriculture campaigns or other pressure/direction to grow specific crops. The crop varieties and tools selected will be tailored to support improved food security for individual households and farmers (refined as part of the development of CSA packages), particularly through improved livelihoods as well as utilization of self-grown produce. Given the total beneficiaries in FSM ~100,000 people, it is not only possible, but more effective to target individual households and communities for impact than it would be in other contexts where more government coordination/campaigns are needed.

For the envisioned reserve capacity activities, the project will utilize existing and establish new national and State seed banks (siting aided by the IVA analysis from Component 1). The national seed banks will be the repository of seed samples and plants from respective States to ensure the security of seed deposits and availability in case of crop failures in certain States. The project will also support seed exchanges and empowerment of community seed banks to collect, conserve, multiply seed crops and varieties to make communities more resistant to climate change impacts. Farmers and other producer groups can loan seeds and return more than they loaned thus creating a buffer for next cropping season. The project will also help establish further contingency measures in areas prone to natural calamities to have supply of short-duration crops like vegetables including elevated nursery beds; raising crops in movable containers or planting vines in roof tops. These seed banks will mostly be owned by the farmers associations and PGS groups, but in some cases like for demonstration gardens collocated with schools, the schools or States will retain ownership. The seed banks are owned by the State currently and some will transfer ownership to the farmers associations as well.

For processing and preservation, the project will support specialty crops in the different States and PSGs, but in general the project will work with researchers and leverage results from previous projects to identify and establish small household-scale techniques for food processing, including but not limited to drying and grinding breadfruit and taro to make flour. The processing of local produce such as breadfruit and taro to make flour is a well-known process in the Pacific that requires relatively limited resources to complete.⁹⁶ COM-FSM already has experience in building and testing a solar tunnel for drying local produce in Yap. Once made into flour, the shelf-life of breadfruit and other processable produce is extended considerably and the flour can be used to make a wide range of dishes.⁹⁷ Additionally, the flour has both local and export markets available.

Overall Component 2 accomplishes three key objectives for addressing identified barriers and overcoming baseline climate and food insecurity:

- Developing specific tailored measures for climate adaptation and creating effective pathways for deployment in local communities
- Building capacity for government agencies and institutions to actually promote, leverage, and support climate adaptation and CSA at the local level
- Providing new opportunities for communities to improve agricultural production and household food security (access, availability, and stability)

Outputs and activities under this component are:

- 2.1 Promote and establish traditional and climate resilient agroforestry systems appropriate for different island systems and customized to the climate conditions being faced (linked to findings from Component 1 and the CAAR project)
 - 2.1.1 Identify, inventory, and prioritize promising climate resilient agroforestry practices that can be effectively adapted and utilized in FSM including, but not limited to crop rotation/spacing, temperature/drought/salt-resistant seeds and varieties, soil tilling, organic farming and integrated management techniques.

⁹⁶ Breadfruit Institute; Available at: https://ntbg.org/wp-content/uploads/2020/02/Flour_Grinding_Black_White-2.pdf

⁹⁷ Breadfruit Production Guide – Breadfruit Institute; Available at: https://hdoa.hawaii.gov/add/files/2014/05/Breadfruit_Production_Guide_web_edition.pdf

- 2.1.2 COM-FSM will develop a set of criteria to prioritize the deployment and implementation of climate resilient agroforestry practices across communities in the four States. Data collection will include stakeholder consultations with government agencies, COM-FSM Cooperative Research and Extension, NGO's, community-based organizations and women's groups in each State, combined with desktop research). On-farm evaluations of identified practices and crops to further test the adaptation of the best varieties to local conditions
- 2.1.3 Designs identified under activities 2.1.1 will be field tested to further refine and help prioritize the best practices and varieties to be utilized based on local conditions across farming communities in FSM (140 communities). Context-dependent variables such as yield, salinity, drought/flood tolerance, growth cycles, pest resistance, space, inputs needed, and cost/availability will all be tested. Train farming households on small-scale, climate adapted practices for poultry farming
- Under this activity all FSM communities will be trained to understand the basic skills and principles of backyard poultry caring techniques, including breed selection, feed, housing, animal health, and management, appropriate for climate vulnerabilities within the community.
- 2.1.4 Based on the crop varieties from 2.1.1, select crop varieties that can be leveraged to create locally grown alternative feed sources for livestock.
- Crop varieties and data collected from 2.1.1 will be used to identify varieties of crops that can be best used to create locally grown alternative feed sources for livestock in the context of local climate vulnerabilities.
- 2.1.5 Deploy gender-friendly climate-smart agricultural packages (technology, species, practices, techniques) that can be deployed in local communities at the household level
- 2.1.6 Tailored climate-smart agricultural packages will be deployed to address specific vulnerabilities (1.2.2, 1.5.1) and climate impacts at the community and household level (target 140 communities). Develop community demonstration gardens at all local elementary schools on the main islands of FSM (140 elementary schools) where community members including famers groups (mainstreamed to ensure female farmers fully integrated into State-level farmer's associations), supported by extension agents, can test/experience CSA packages and build awareness of its benefits
- This activity will build on the vulnerability assessments (1.2.1, 1.2.2) to develop appropriate community gardens and community taro beds at local elementary schools. State-level farmers associations will lead the work on these gardens bringing in community members including women's groups, PGS groups, youth groups, school administrators, and local government officials. State-level farmers associations will be supported by extension agents to help deploy and interface with the CSA packages (2.1.5).

2.2 Build the capacity of FSM households and support channels to utilize climate adaptive farming techniques and effective household nutrition, including women-headed households

- 2.2.1 Develop and implement tailored trainings on market access, value chains, and the CSA practices identified in 2.1 for extension agents and agricultural advisors
- 2.2.2 This activity will be deployed as a train-the-trainer workshop with agricultural advisors, extension agents, and agriculture consultants being trained in a variety of different thematic areas including market access, value chain development, and the specific CSA packages promoted by the project (2.1.5). Alongside the demonstration gardens, leverage extension agents/advisors to provide technical assistance for individual farmers on CSA packages
- 2.2.3 This activity will provide technical assistance for individual farmers on CSA packages. The goal is to reach each community in FSM on the 4 main islands (140 communities). The technical assistance will be deployed through small group trainings over the course of the 2-4th year of project implementation to ensure farmers are supported through several harvesting cycles. Provision of climate smart packages (i.e. tools, compost bins, organic manure, plant nutrients, seeds) for farmers

2.3 Development of reserve capacity for overcoming periods of climate disruption

- 2.3.1 Establishment of nurseries and seed banks at the State and community levels, which will include procurement of initial provisions of seedlings to the seed banks.
- State-level farmer's associations will convene local stakeholders to establish nurseries and seed banks at the State and community level to ensure a continuous supply of resilient traditional plants and to provide for sustainable post-disaster recovery. The State-level farmer's associations will be supported by Agriculture Extension Agents. The exact placement of the nurseries and seed banks will take into considerations the results of the IVF (1.2.1).
- 2.3.2 Set up through a consultative process local management committees to manage seed banks and nurseries through multi-stakeholder, community-based management decisions
- 2.3.3 State-level farmer's associations will support the ongoing operation and maintenance of the seed banks and nurseries (2.5.1) by working with local communities to establish management committees for the seed banks and nurseries. State-level farmer's associations trained to effectively manage nurseries and seed banks.
- State-level farmer's association members will be trained on effective management techniques for the seed varieties (2.1.3). Proceeds from selling seeds and seedlings will be channeled back into the State-level farmer's associations to support their ongoing operations.

Component 3. Strengthened climate-resilient value-chains and market linkages across agriculture sector

While ensuring households build the capacity and knowledge to utilize climate-smart agricultural practices is a key pillar toward achieving food security, there is currently little established connectivity and opportunities for farmers to sell their food in local markets. As above, under half (48%) of the households with land for agriculture reported engagement in markets for their produce. 30% of farm households lived less than an hour from a market, but for 2.5% of households there was no market accessible or available. Around 9% of households with land for agriculture reported participating in product organizations in the past year. This was consistent across the States with participation by 10% of farm households in Yap, 8% in Chuuk, 9% in Pohnpei and 11% in Kosrae.⁹⁸

An assessment of produce markets in the major States found that there is substantial market room for farmers to produce more vegetables and produce in Pohnpei, Kosrae, and Chuuk. In Yap there is need for better market coordination as certain products are very saturated leading to suppressed sales and spoilage. It further should be noted that prices for local vegetables, particularly in Chuuk can be comparatively high (see Annex 13).⁹⁹ The lack of opportunity leads to declining confidence in the sector and low availability of domestic supply. There are also few private markets in the main urban centers of all four States to buy and sell crops. Most supermarkets and private local markets have also reported that supply of local produce is inconsistent and erratic. All of this suggests a need for improved market development and coordination which is the focus of this component.

One successful initiative for market development has been the Island Food Community of Pohnpei (IFCP). Prior to IFCP's establishment, very little local food was sold in restaurants and takeaway shops. Local produce was sold whole in the local markets and prepared at home. Most of the buyers (Pohnpeians in town with no access to land, and Yapese, Chuukese, Kosraean's and other expats working for the governments) of the local produce sold in the local markets were residents of town who did not have access to land and almost all local produce markets were located in town. Those who owned or had access to land, would grow their own local produce for consumption and cultural events, and would sell the excess to local markets in town. As a result of IFCP's efforts, local people's behavior towards local foods has improved dramatically due to research and outreach that showed the high nutritional values in local foods such as taros, breadfruits, yams, bananas, etc. and also the increased awareness that diabetes and other diseases were linked to the consumption of rice, bread and other imports. Today, IFCP and other partners continue to promote the production and consumption of local foods, which has increased the amount of local foods produced and sold to takeaway shops and restaurants. IFCP has also started to help farmers find ways to preserve their local produce for longer shelf life. This includes making preserved breadfruits and making flower or dried products from bananas, taro, breadfruit, etc. The present GCF project, will build upon the initial success of the IFCP model in Pohnpei and continue to scale these efforts in Pohnpei and in the three other States.¹⁰⁰

⁹⁸ FSM Integrated Agriculture Census 2016 (2020); Available at: http://www.fsprd.fm/wp-content/uploads/2020/06/200120_FSM_IAC_2016.pdf

⁹⁹ GAFSP FSM Market Study (July 2019); Available at: https://www.gafspfund.org/sites/default/files/inline-files/Note%201.%20Multi-country_GAFSP%20SIFWaP%20FSM%20Market%20Study.pdf

¹⁰⁰ Island Food Community of Pohnpei; Available at: <http://www.islandfood.org/>

In addition to the IFCP model for market outlets for local produce, the project will also build upon existing school feeding programs funded through the FSM government. Currently, only early education and high school students participate in the food programs. All other students attending both public and private schools, except for boarding schools like Xavier High School and the College of Micronesia - FSM's main campus, do not have access to specific school feeding programs. Specifically, the project will be partnering with the FSM and State departments of education to increase availability of local foods in these food programs as well as working with private school boards and managers, and PTAs to require vendors that sell meals to students to include local foods in their meals. Some public and private schools are already doing some of this voluntarily (i.e. requiring vendors who sell on their school properties to only sell healthy meals), so this project can formalize this and help link farmers to the different schools and vendors who prepare the meals. Further, Memos of Understanding can be developed among the schools interested in implementing feeding programs and IFCP for sustained supplies of seeds and plants for school gardens in which the harvests are to be used for the feeding programs and for IFCP for development of value-added products for selected crops.

The project will also be leveraging the Participatory Guarantee Schemes (PGS) model established through the Coconuts for Life program.¹⁰¹ In this model. A PGS model is founded on an agreement regarding quantity, quality, price etc. between a purchaser and a producer of an agricultural good, in this case coconuts. The producers of the good are organized into groups, which jointly work to meet the purchasers demand. PGS groups set up in Pohnpei and Chuuk include farmers who are from the most vulnerable groups. While these farmers own and/or have access to land to grow, harvest and sell coconuts, they are mostly those with very low income and with very little alternative means to make money.

In 2017, MCT in partnership with Vital Group (the dominant energy provider in FSM) set up the Coconuts-for-Life (C4L) PGS program. C4L was designed to rehabilitate the coconut agroforestry and processing industry across FSM. The initial phases of the program involved stakeholder engagement and setting up the coconut farmers groups throughout FSM. Once established, these farmers groups agreed to provide a pre-determined amount of coconuts to Vital Group at regularly scheduled intervals. Vital Group then uses these coconuts to produce crude coconut oil, virgin coconut oil and copra meal for sale in the domestic market. Initially the program is being managed and financially supported by MCT. However, once firmly established, profits from the program will be used to establish a PGS trust account that will then be used to fund the continuation of the program (the set-up of the trust account will be done through the C4L program). Although the C4L program is a beneficial program in FSM, there is still the need for establishing a State-level association to support the PGS groups at both the State and National levels. The State-level associations are meant as a vehicle for the PGSs groups to liaise with government officials, disseminate information, provide support for seed banks and nurseries, and expand the range of crops and sustainably feed into local food markets. Some local associations have been developed (such as the Awak Farmer's Association) that allow farmers a forum and have implemented local agricultural projects as part of other small grants programs.¹⁰² However, these associations are not widespread and are not designed to sustainably feed into the local food markets throughout the country. This component will work to expand the PSGs ability to grow and sell a variety of crops to support all of the farmers on the main FSM islands. The creation of State-level farmers associations under Output 1.4 will also support the consistent and sustainable production of locally grown food to local and domestic markets by providing greater coordination across States, PSGs, and crop value chains.

By strengthening the demand side for local food, the viability and long-term sustainability of CSA practices can be achieved through increased income for households. Component 3 seeks to directly address these issues and further address existing barriers and baseline climate and food security vulnerabilities most notably through developing new opportunities for market access thereby increasing farmer incomes and consumption of local food, engaging private sector models for adaptive agriculture practices, creating new pathways and reserve capacity for severe climate disruptions, strengthening awareness of the benefits of local food, and developing opportunities to interconnect small-scale agriculture in support of other food systems.

Outputs and activities under this component are:

- 3.1 Support for the development of new markets and opportunities to increase the availability and affordability of local food

¹⁰¹ Coconuts-for-Life (C4L) Program Proposal. MCT. September 2017.; Document included in Annex 6

¹⁰² SGP Final Project Report – Awak River and Piggery Clean-up Project. Awak Youth Organization. January 2017; ; Document included in Annex 6

- 3.1.1 Identify sustainable financing streams and strategies for low-cost delivery for key staple crops (taro, banana, breadfruit, sweet potato and yam) to support a steady supply of climate resilient crops (identified through Component 2)

One of the key reasons schools, markets, restaurants and other businesses and individual customers stop buying or lose interest in buying local produce is because of the inconsistency of supply of local produce from farmers. Through this activity farmers will be connected to local businesses and the project will support the creation of an agreement for farmers to provide a consistent supply of locally grown produce. This will increase business confidence in local farmers and their produce, which will in-turn increase demand.

- 3.1.2 This activity will build on the “Coconuts for Life” (C4L) programme’s business model/value chain for coconuts to expand beyond one crop and support the development of new markets. Link State-level farmer’s associations with current initiatives to increase demand for local food - including the Island Food Community of Pohnpei¹⁰³ and State-level school feeding programs

3.2 Enhanced food processing and preservation

The Center for Entrepreneurship of the College of Micronesia-FSM will lead this activity and connect State-level farmer’s associations with current food programs in FSM. State-level farmer’s associations will act as the liaison between the food programs in FSM and the local farmers who will provide the supply.

- 3.2.1 Establish key food processing techniques for households utilizing local climate-resilient produce.¹⁰⁴

The Center for Entrepreneurship of the College of Micronesia-FSM will research and leverage results from other projects to identify and establish small, household-scale techniques for food processing including but not limited to drying and grinding breadfruit and taro, etc.

- 3.2.2 Organize training sessions at community demonstration gardens on processing, packaging and storage techniques for women’s groups and individual household farmers

The Center for Entrepreneurship of the College of Micronesia-FSM will provide training for women’s groups and individual household farmers for processing, packaging, and storage techniques to improve the longevity of food production.

3.3 Increased consumption of local produce and awareness of benefits of local food

- 3.3.1 Develop a communications plan for promoting local products (demonstrations, local forums, displays, events, school posters and campaigns).

The Center for Entrepreneurship of the College of Micronesia-FSM will work with local women’s groups, PGS groups, and State-level farmer’s associations to develop a strategic communications plan for promoting local produce both for consumption in individual households, but also within local and larger markets (Go Local Campaign). This plan will potentially include activities like demonstrations, local forums, displays, events, school posters and campaigns, etc.

- 3.3.2 Provide trainings to implement communications plan and effectively build awareness of local consumption and nutrition.

The Center for Entrepreneurship of the College of Micronesia-FSM will operationalize the communications plan developed in 3.3.1 by providing trainings for community groups particularly women’s groups on implementing the communications plan and effectively building awareness of the benefits of local consumption and nutrition.

- 3.3.3 Host community and school workshops at demonstration gardens highlighting the value of local food for families and youthsⁱ

Trained community leaders along with the Center for Entrepreneurship of the College of Micronesia-FSM will host community and school workshops to demonstrate the value of local food

¹⁰³ Let’s Go Local! Program; Available at: <http://www.islandfood.org/>

¹⁰⁴ Particularly for root crops like taro and yams, which traditionally have a short shelf life, utilizing established techniques like solar drying, processing into products like flour. Also include breadfruit preservation, canning (baby food, jams, etc)

and good nutrition. The community meetings will take place at each of the local elementary schools on the 4 main islands of FSM (140).

Activity Level Climate Rationale

To further reinforce the validity of the individual project activities to the climate rationale above, the following table highlights activity specific climate rationales.

Project Components, Outputs, and Activities	Climate Rationale
<p>Component 1: Establish an enabling environment for adaptive action and investment</p>	<p>Component 1 works to address some of the principal gaps and barriers for climate adaptation in the agricultural sector identified for FSM including the lack of capacity at the State and national level, lack of integration of climate change in national strategy and development priorities, and the lack of descaled climate information for government and household decision makers. Component 1 will build on several assessments and studies already undertaken to complement and build upon the evidence base for introducing appropriate adaptation measures. Altogether, Component 1 builds capacity to specifically address the issue of climate change in planning and operations. This is crucial for building national awareness and institutional support for responding to climate change in the agricultural sector which is a critical precursor for sustained support and engagement through the State agencies and local communities.</p> <p>Specific Activities</p> <p>Establishment of Institutional Coordination Mechanisms – Collaboration with planners, policymakers, and researchers to establish protocol for integrating climate change considerations and climate information into the National Agriculture Policy and the equivalent policies at the State level. The resulting output will facilitate coordinated national decision making on agriculture that effectively incorporates the risks and opportunities of climate change on the agriculture sector.</p> <p>Integrated Vulnerability Assessments – Collaboration with researchers, State level institutions and policymakers, and local communities to undertake and publish integrated vulnerability assessments for agriculture and climate change across the four FSM States. The assessments will identify and map potential impacts from climate change including arable land loss, saltwater intrusion, tidal surge risk, and the use of traditional agricultural practices. This information will then be leveraged to develop descaled assessments for specific communities and decision-makers to guide the development and deployment of appropriate climate interventions are introduced</p> <p>Policy Guidance for Agricultural Policy – Develop specific recommendations for ensuring that climate change and adaptation considerations are mainstreamed into the National Agriculture Policy and State Agricultural Policies. This activity will develop the overall program for increasing the awareness of climate change risks in the agricultural sector including: (i) development of training curriculum for national and State-level</p>

policymakers and agencies and (ii) establishment of mechanisms for facilitated knowledge and information exchange. In so doing, this activity will ensure effective incorporation of climate risk and adaptation into policy decisions in agriculture.

Establish State-level Farmer Associations – State-level Farmer Associations enable better connectivity with farmers which amplifies the uptake and utilization of CSA packages envisioned in the project and will not only provide a means to disseminate available information but will create channels whereby other activities and training can be conducted and will build networks across States. Creating greater connections across the States is a major part of the strategy to build resilience through cooperation and relying on domestic food sources in cases of disaster or prolonged drought, etc.

Tailored Communications for Agricultural Decision-making – This activity utilizes the integrated vulnerability assessments from Output 1.2, CSA communications (2.1) and existing weather/climate information streams currently relayed to DECEM (NOAA Regional Weather Service, Pacific Tsunami Center), to inform development of targeted communications materials for CSA and farmers including parameters like seasonal rainfall, drought events, etc. tailored to the needs and priorities of local operational areas. This will help support improved agricultural decision-making and specific agricultural practices for climate adaptation.

Component 2. Enhance the food security of vulnerable households by introducing climate-smart agriculture practices

Component 2 develops specific tailored measures for climate adaptation mostly through the development of climate smart agricultural packages (technology, adapted seeds, practices, etc.) and creates effective pathways for deployment in local communities. Further, this component builds capacity for government agencies and institutions to actually promote, leverage, and support climate adaptation and CSA at the local level. Finally, Component 2 provides new opportunities for communities to improve agricultural production and household food security (access, availability, and stability).

Specific Activities

Promote and Establish Climate Resilient Agroforestry – Developing an inventory of climate resilient agroforestry practices and technologies that can be effectively adapted and utilized in FSM provides the foundation for climate resiliency in individual communities and households. This will include specific training and demonstrations that will provide for greater uptake and utilization of climate adaptive practices by the individual farmers.

Capacity Building for Extension Agents – Increasing the capacity of agricultural advisors to utilize and in turn train farming households on new climate technology packages and agroforestry practices helps to amplify the adoption and effectiveness of climate resilient practices both for project participants, as well as future participants beyond the scope of the initial project.

Training on Agroforestry Practices – Adoption of climate resilient agroforestry practices by the individual household farmer enables climate resilient livelihoods and supports

improved food-security for households while also providing for long-term adaptation of agricultural systems to climate change.

Development of Reserve Capacity for Climate Disruption – By establishing locally managed seed banks and nurseries at the State and Community Levels, the project is providing for additional bridging capacity for periods of climate disruption which improves the overall resiliency of the targeted communities to climate change.

Component 3. Strengthened climate-resilient value-chains and market linkages across agriculture sector

Component 3 seeks to develop new opportunities for market access thereby increasing farmer incomes and consumption of local food, engaging private sector models for adaptive agriculture practices, creating new pathways and reserve capacity for severe climate disruptions, and strengthening awareness of the benefits of local food all of which works to address critical food security challenges and the exacerbations from climate change.

Specific Activities

Market Development and Value Chains – Targeted marketing support for farmer helps to improve market access and catalyze opportunities for sustaining new climate adapted livelihoods. It further increases availability and affordability of local food and helps to upscale existing food-security business models.

Food Processing and Preservation – Food processing support and training for individual farming households and communities helps to enable long term adaptation to climate change, new income streams, and importantly an additional measure of bridging resiliency for climate disruptions to food supply.

Awareness Building for Local Agriculture – Targeted outreach and community engagement on the issue of local agriculture can further build opportunities for farmers and help to secure long-term food security and nutrition components.

Beneficiary Selection

Given some of the constraints identified above, this project will be focusing on the high island chains in the four FSM States, and will not be targeting outer atoll communities. Secondly, the project will be leveraging existing studies and importantly the results from the integrated vulnerability assessments conducted in Component 1 to focus on areas that have agricultural potential for specific crops and CSA practices, adaptive capability to climate change given specific vulnerabilities, and other strategic considerations like distance/access to markets, proximity to schools, availability of existing business models, etc. The aim of the project is to be as inclusive as possible and to target all farmer households focusing on households that utilize agriculture as the main source of subsistence, income, and livelihood based on past surveys and census information. Depending on the crops/practices selected, the project will also use that information to aid beneficiary selection, particularly for business models under Component 3. As well, the project will focus first on lower income households, but it is expected given the limited number of beneficiaries in the targeted areas that any main island households demonstrating interest will be able to participate.

The project will also consider alignment with agriculture/other group membership. Following FSM's Coconut for Life (C4L) business model, the project will build on the Participatory Guarantee System (PGS) groups that continue to form in Pohnpei and Chuuk and will be expanded to the other two FSM States. This mechanism will be the central focus for organizing and coordinating beneficiaries. As above, the PGS model is focused on supporting the most vulnerable farmer groups, particularly those with limited access to land and capital in rural communities. The project will conduct specific outreach in the main island communities to help all vulnerable and independent household farmers to join a PGS group or start their own PGS to be part of a formal and organized farmers organization. In

addition to PGS group membership, the project will also directly reach out to existing women's and youth organizations to ensure that underrepresented groups are engaged effectively.

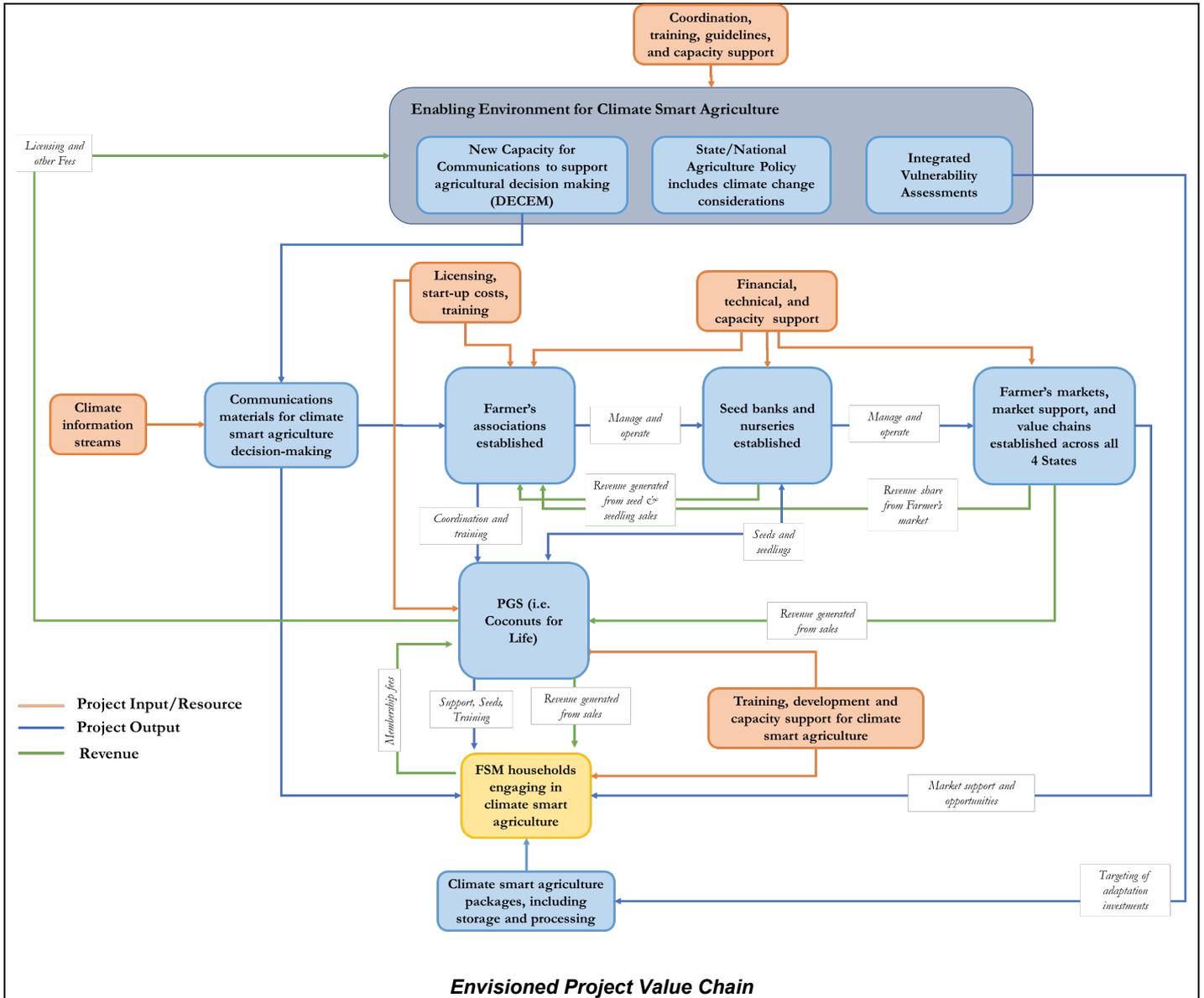
There is significant diversity in income, livelihoods, and other demographic factors across FSM States and municipalities, so another critical selection criterion will also focus on community engagement and interest. All of these criteria will be refined based on project activities (i.e., vulnerability assessments, continuing stakeholder dialogues, CSA packages selected, etc.).

Value Chain and Incentives for Change

Throughout the national strategies and policies for FSM is a focus on improving food security. The proposed project interventions help to improve delivery on these Stated objectives. At the State/national government level, there are a number of incentives supporting long-term behavior/practice change that will be developed by the enabling environment activities in Component 1. First, by creating the national coordination mechanism and integrating climate change specifically into national/State policies, particularly the State agriculture policies create the social mandate for government to act on CSA. Further, the coordination mechanism, policy adjustments for climate change, training, communications and other capacity support for DECEM, communications material based on climate data, etc. will help to improve FSM's overall capacity to effectively manage the overall agriculture sector (a major sector in FSM) which is a key priority of FSM communities and constituencies across the country. As well, the vulnerability assessments and communications/capacity building for DECEM can help to support other adaptation priorities and projects. Finally, there are also the small, but not insignificant revenue streams for State and local governments from the PSG and farmer's associations registration, fees, and licensing.

The PSG model discussed above is the primary vehicle for sustaining behavior change at the household and community level. These PSG groups create new support networks for farmers and households provide business and other trainings, establish formal systems and mechanisms to help them manage their businesses/money properly and ensure proper inputs and supply chain, establish revolving funds to support individual farmers, make trade easier and more consistent, and open up new value chains and partners. All of this increases income and importantly income security for farmers while also improving livelihoods and allowing them to better provide for their families. Additionally, the project will also assist the initial collection, procurement of seeds and establishment of structures for growing and storage of seeds and other planting materials in the nurseries. Learning the concepts of seed banking, farmers can benefit from seed exchange and seed loaning concepts. Specifically, the seed banks to loan out seeds to individual members to be returned following harvest. Excess seeds can be sold for additional revenue. State-level farmer's associations will generate start-up funds through membership fees, sales from seed banks and nurseries and novelty food products sold at local markets.

An overview of the planned incentive structure is provided in the diagram below.



B.3. Implementation / institutional arrangements (max. 750 words)

The Micronesia Conservation Trust (MCT) will be the Accredited Entity (AE) designated by the Federated States of Micronesia (FSM). The AE will be responsible for supervising the implementation, financial management, evaluation, reporting and closure of the project, as well as having overall fiduciary responsibility for the project.

The FSM national government, acting through the Department of Resources and Development (R&D) and the Department of Environment, Climate Change & Emergency (DECEM), as well as the College of Micronesia (COM-FSM) will serve as the Executing Entities (EE). The FSM government and COM-FSM will assume overall responsibility for the effective delivery of required inputs in order to achieve the expected project outputs. The FSM government will be responsible for Component 1 and COM-FSM will be responsible for Components 2 and 3.

Disbursement of funds will be from the Green Climate Fund to the Micronesia Conservation Trust (MCT), which will be responsible for budgeting, procurement, and expenditure. The project funds will be deposited in a designated account managed by MCT. It is envisaged that expenses will be paid directly by MCT to the project partners in order to enhance accountability and oversight. The FSM government has indicated its wishes to escalate efficient and effective project management and delivery, and thus has agreed for MCT to procure certain services directly.

MCT will enter into appropriate agreements (Project Cooperation Agreement or Memorandum of Understanding) with R&D, DECEM and COM-FSM, as the EEs, for the execution of the project. The Project Cooperation Agreements (PCA) establish clear roles and include terms of reference (ToRs) for both parties for the delivery of the proposed activities, the schedule and conditions for instalments, the determination of the prevailing fiduciary standards and the terms and conditions for arbitrations and termination of contract. The PCA also includes specific obligations for the EEs on project execution, financial management, personnel administration and reporting, as well as on arbitration and liability terms.

Roles and responsibilities

Accredited Entity: MCT, as the Accredited Entity, will manage the funds for the implementation of the project. In addition, MCT will co- chair the Project Steering Committee (PSC) to ensure that appropriate project management milestones are managed and completed. As an Accredited Entity to the GCF, MCT is required to deliver GCF-specific oversight and quality assurance services including: i) day-to-day project oversight and supervision; ii) oversight of project completion; and iii) oversight of project reporting. MCT will be responsible for overseeing the implementation of the proposed project in coordination with the Executing Entity, PSC and the PMU. In addition, an MCT representative will fulfil the role of Task Manager (TM), taking responsibility for project oversight and supervision. The TM will also ensure consistency with GCF and MCT policies and procedures, including: i) participating in the annual PSC meetings; ii) facilitating the project's mid-term and final evaluations; iii) clearing the Progress Reports and Project Implementation Reviews; iv) undertaking the technical review of project deliverables; v) providing input to the annual portfolio reporting to GCF; and vi) preparing requests for disbursements.

Executing Entities:

FSM National Government (R&D and DECEM)

The FSM national government will be an Executing Entity, represented by two of its national departments: the Department of Resources and Development (R&D) and the Department of Environment, Climate Change and Emergency Management (DECEM). R&D, as the lead government entity for the agriculture sector, will be in charge of Component 1 as well as the day-to-day execution of the project through the establishment of a Project Management Unit (PMU). Overall coordination with other GCF projects and climate change initiatives will be undertaken by FSM's Department of Finance and Administration, as FSM's NDA for the GCF. DECEM serves as the lead government agency on issues related to emergency, environment and sustainable development, and climate change. DECEM is responsible for disseminating information related to early warning information to mitigate damages from disasters. DECEM will take the lead on output 1.5: Disseminate weather and climate information for climate-risk informed, adaptive management of resilient agriculture”.

COM FSM

The College of Micronesia-FSM (COM-FSM) is a multi-campus institution with the National Campus located in Pohnpei, and a State Campus in each State. COM-FSM runs the Small Island Agricultural program which addresses sustainable plant and animal production and marketing including potential adverse effects on the environment and ecosystems due to improper practices. As the main institution on FSM with experience training farmers across the four States and leading research on food security within the local context, COM-FSM is the legal entity for Components 2 and 3.

In 1999, through a memorandum of understanding with the national government, COM-FSM accepted management of the FSM Fisheries and Maritime Institute in Yap. The purposes of the college are mandated by national law PL 7-79 “College of Micronesia-FSM Act of 1992”

The college is accredited by the Accrediting Commission for Community and Junior Colleges of the Western Association of Schools and Colleges, an institutional accrediting body recognized by the Commission on Recognition of Postsecondary Accreditation and the U.S. Department of Education. Accreditation was awarded in 1978 and reaffirmed in 1982, 1987, 1992, 1998, 2005, 2013, 2016 and 2018. The college is currently preparing its self-evaluation report to maintain its accredited status beyond 2023.

All work at COM-FSM is guided by its mission Statement:

The College of Micronesia-FSM is a learner-centered institution of higher education that is committed to the success of the Federated States of Micronesia by providing academic and career & technical educational programs characterized by continuous improvement and best practices.

COM-FSM assesses its effectiveness in achieving its mission through mission fulfillment indicators. The mission guides COM-FSM's Strategic Plan which has two strategic directions between 2018 and 2023:

- i) Innovate academic quality to ensure student success
- ii) Strengthen resources to meet current and future needs.

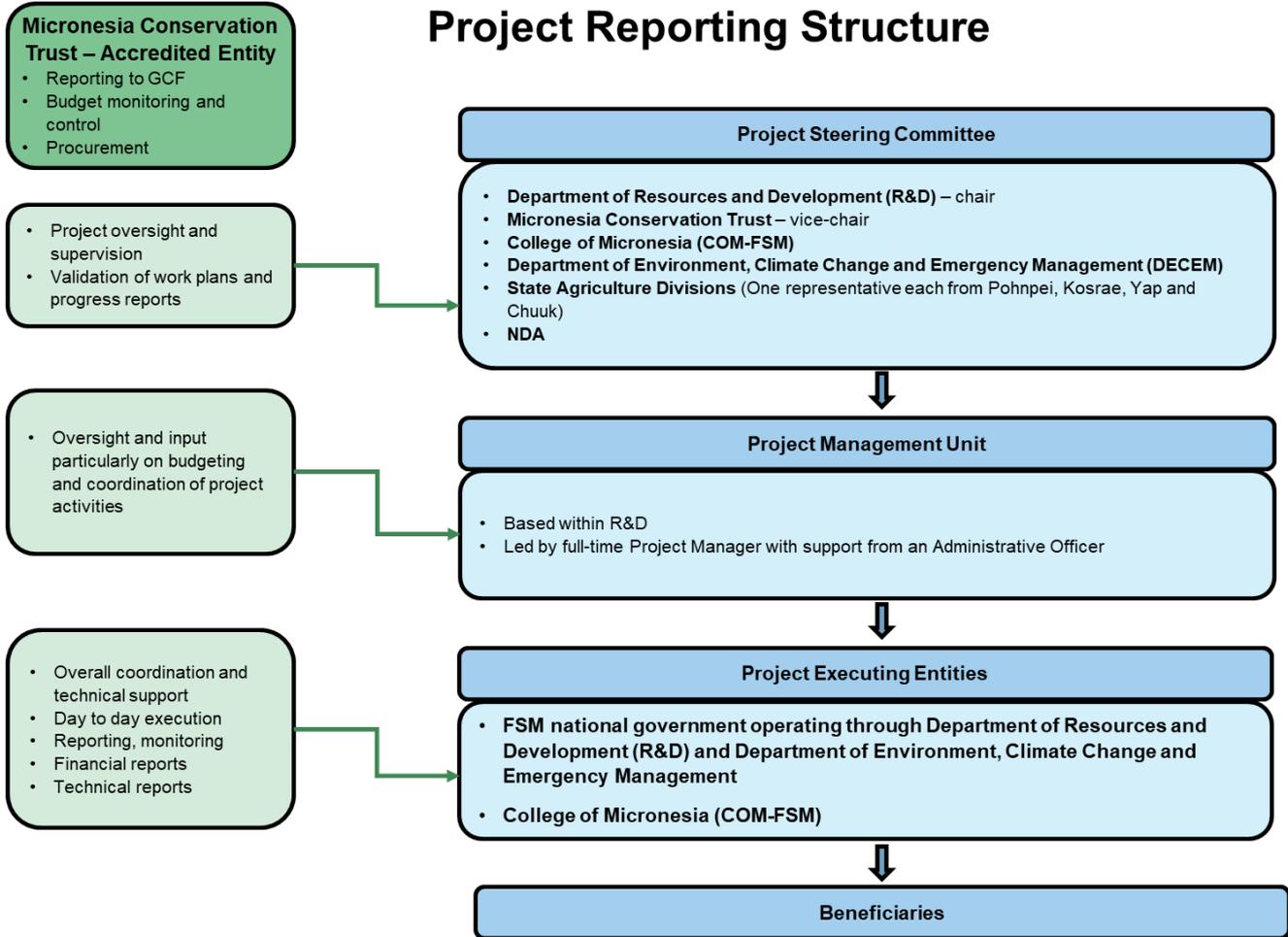
The Center for Entrepreneurship promotes student success by providing programs, services, and training that allow students to explore avenues and opportunities for entrepreneurship. To achieve this, the Center focuses on four goals: 1) Facilitating local industry growth through research and development. 2) Creation of innovative and sustainable student operated start-up businesses. 3) Specialized business services to existing SMEs and startups, and 4) Encourage and support local entrepreneurship. In the last academic year, the Center expanded its services to include Small Business Development Center activities in Pohnpei by providing business support to small business owners. The Center for Entrepreneurship is under the departmental oversight of the Vice President for Enrollment Management and Student Services.

The Cooperative Research and Extension (CRE) is an affiliate of the College of Micronesia Land Grant Program. The CRE focuses on developing and assisting a well-informed populace to ensure wise and judicious management of the limited human and natural resources needed to support a viable FSM economy. Its mission and activities are centered on a 5-Year Plan of Work which is an integrated approach to critical issues of strategic importance to the entire Micronesian region. The objectives are addressed through interdisciplinary community level research, extension and education programs embodied in the Plan of Work. Interdisciplinary efforts in research, extension and education require not only input of researchers but also extension agents, stakeholders, and community members. In the current plan, CRE identified 6 Critical Issues of national and regional importance, including Lack of Local Crop Production and Food Insecurity (Critical Issue #1) and Climate Change Challenges in Micronesia (Critical Issue #4). Within COM-FSM, CRE is under the departmental oversight of the Vice President for Instructional Affairs.

Project Steering Committee (PSC): R&D will convene and chair the Project Steering Committee (PSC), while MCT will assume the role of vice-chair. The two implementing partners COM-FSM and DECEM, along with, one representative from each of the State Agriculture Divisions (Pohnpei, Kosrae, Yap and Chuuk); and the GCF's NDA. A gender balance will be ensured in the PSC. The mandate of the PSC will include: i) overseeing project implementation; and ii) reviewing annual workplans and project reports. The PSC will meet at least twice a year – with *ad hoc* meetings held as and when necessary – to discuss the project's main performance indicators and provide strategic guidance.

Project Management Unit (PMU): The PSC will be supported by the Project Management Unit (PMU), that will be based within the R&D. It will be led by a Project Manager (PM) and will include an Administrative Officer. The PMU will coordinate activities between MCT and R&D as well as the implementing partners to oversee the implementation of the project's activities. The Project Manager will: i) lead and direct the PMU; ii) provide administrative and technical expertise; iii) be responsible for the day-to-day implementation and management of the project, iv) serve as the focal point for interactions between the project stakeholders and partner organizations (e.g. government departments, NGOs, civil society groups); and v) meet regularly with project managers of closely-related ongoing projects operating in the target areas to ensure synergy.

Project Reporting Structure



Capacity Assessment of EEs

The United States Agency for International Development (USAID) funded 'Institutional Strengthening in Pacific Island Countries to Adapt to Climate Change' (ISACC) project seeks to respond to some of the key challenges that limit the ability of PICTs to effectively implement national climate change priorities. The goal of the regional project is to strengthen the national institutional capacity of PICTs to effectively plan, coordinate and respond to the adverse impacts of climate change. The regional institutional mapping exercise identified both the human capacity and policy gaps that currently exist for each of the eight Pacific Island countries (including FSM) involved in the project through a desktop study of relevant national policies and strategy documents, national development plans, existing national financial assessments, previous project reports, regional agency experiences, climate change portals and government websites. The assessment included key sectors such as agriculture, forestry, water, education, finance, health, development planning, finance and social development, by identifying both policy and human capacity gaps that impede multi-sectoral approaches to mainstreaming climate change adaptation.

Through the country assessment of FSM, the report identified financial management and human resources as weaknesses in the government system. MCT through its own due diligence assessment of both R&D and DECEM undertaken initially in 2018 when first developing the project proposal, confirmed weaknesses in procurement and financial management of the FSM government. As such, the main recommendation to mitigate these risks was to structure implementation arrangements in such a way as to minimize the risk of any mismanagement and project implementation delays. Specifically, MCT should handle procurement for the government outputs/activities. Additionally, given the risk factors highlighted by the due diligence assessment, no funding will flow to the executing

entities or beneficiaries. Therefore, all funds will flow directly to the accredited entity (MCT). In 2020, MCT once again assessed whether any changes have been made to the government of FSM's procurement or financial management system since 2018 and no changes have been made. MCT has concluded therefore that the most effective and efficient implementation process is for MCT to undertake procurement on behalf of the project's executing entities.

For COM-FSM, MCT has utilized the Financial standing of the COM-FSM that is embedded within Standard II of [ACCJC's accreditation standards](#). Standard II: Human, physical, technology, and financial resources (section D) enable these programs and services to function and improve. Every year COM-FSM submits a [Financial report](#). All of COM-FSM's [historical Accreditation reports](#) are publicly available. Procurement policies, procedures fall within these standards. From these assessments COM-FSM has the full capabilities, financial resources, appropriate experience to implement Components 2 and 3 of the project. To ensure consistency across the project and a more streamlined implementation – COM-FSM will be subject to the same rules as the Government of FSM, acting through DECEM and R&D. Annex 15 includes MCT's letter affirming the ability of COM-FSM and the Government of FSM's ability to undertake their respective responsibilities in project implementation (attachments to the annex include the 2020 assessment undertaken by MCT).

All EEs for this proposal are separate legal entities. MCT as the AE will enter into a legally binding agreement with the Government of FSM represented by R&D and DECEM as well as a separate legally binding agreement with COM-FSM. This agreement operates as the legal contract for the implementation of the project and includes specific obligations, arbitration, and liability. The specific activities each party is responsible for will be laid out clearly in the agreements as well as all reporting requirements, including reporting on in-kind co-financing committed.

Procurement: MCT is acting as a service provider to FSM and COM-FSM providing them with services to ease the procurement process. The decisions on what is to be procured and the engagement of such procured parties is done by FSM and COM-FSM

Financial flows: As mentioned above, all GCF funds will flow directly to MCT. No funds will enter into the accounts of either the Government of FSM or COM-FSM. Goods and Services will be procured and paid for directly by MCT.

GCF resources will not be used to purchase pesticides, herbicides, biocides or GMO or Patented Hybrid Seeds.

C. FINANCING INFORMATION

C.1. Total financing

(a) Requested GCF funding (i + ii + iii + iv + v + vi)		8,583,350		Options	
GCF Financial Instrument		Amount	Currency	Tenor	Pricing
(i)	Senior loans	Enter amount	Options	Enter years	Enter %
(ii)	Subordinated loans	Enter amount	Options	Enter years	Enter %
(iii)	Equity	Enter amount	Options	5 years	Enter % equity return
(iv)	Guarantees	Enter amount	Options		Enter %
(v)	Reimbursable grants	Enter amount	Options		
(vi)	Grants	8.583350	million USD (\$)million USD (\$)		
		Total amount		Currency	

(b) Co-financing information¹⁰⁵	.81			million USD (\$)million USD (\$)		
Name of institution	Financial instrument	Amount	Currency	Tenor	Pricing	Seniority
Micronesia Conservation Trust (MCT)	In kind	.26	million USD (\$)	5 years	Enter%	Options
Department of Environment, Climate Change and Emergency Management (DECCEM)	<u>In kind</u>	.25	million USD (\$)	5 years	Enter%	Options
Department of Resources and Development (R&D)	<u>In kind</u>	.20	million USD (\$)	5 years	Enter%	Options
COM_FSM	<u>In kind</u>	.1	million USD (\$)	5 years	Enter%	Options
(c) Total investment (c) = (a)+(b)	Amount			Currency		
	9,393,350			million USD (\$)		
(d) Co-financing ratio (d) = (b)/(a)	.094					
(e) Other financing arrangements for the project/programme (max ½ page)	NA					

C.2. Financing by component

Please provide an estimate of the cost per component (as outlined in Section B.2. above) and disaggregate by sources of financing. This table should match the one presented in the term sheet and the names (in the rows) should match those presented in the logic framework in section D below.

Component	Output	Indicative cost (USD)	GCF financing		Co-financing			
			Amount (USD)	Financial Instrument	Type	Amount (USD)	Financial Instrument	Name of Institutions
Component 1. Establish an enabling environment for adaptive action and investment	1.1 Institutional coordination mechanism established 1.2 Targeted climate change assessments conducted 1.3 Climate change integrated into National and State policy making and planning, particularly in	1,862,300	1,427,300	GrantsGrants	Public Source Public Source	35,000 (MCT); 150,000 (R&D); 250,000 (DECCEM)	GrantsGrants	MCT/ R&D/DE CEM

¹⁰⁵ If the co-financing is provided in different currency other than the GCF requested, please provide detailed financing information and a converted figure in the GCF requested currency in the comment box. Please refer to the date when the currency conversion was performed and the reference source.

	<p>the agriculture sector</p> <p>1.4 Develop network of farmer associations across FSM</p> <p>1.5 Develop and disseminate tailored communications materials leveraging existing climate information streams to support CSA interventions</p>							
Component 2. Enhance the food security of vulnerable households by introducing climate-smart agriculture practices	<p>2.1 Promote and establish traditional and climate resilient agroforestry systems appropriate for different island systems and to the climate conditions being faced</p> <p>2.2 Build the capacity of FSM households and support channels to utilize climate adaptive farming techniques and effective household nutrition, particularly women-headed households</p> <p>2.3 Development of reserve capacity for overcoming periods of</p>	5,941,400	5,696,400	GrantsGrants	Public Source Public Source	145,000 (MCT); 100,000 (COM-FSM)	GrantsGrants	MCT/COM-FSM

	climate disruption							
Component 3. Strengthened climate-resilient value-chains and market linkages across agriculture sector	3.1 Support for the development of new markets and opportunities to increase the availability and affordability of local food 3.2 Enhanced food processing and preservation 3.3 Increased consumption of local produce and awareness of benefits of local food	1,064,650	984,650	GrantsGrants	Public Source Public Source	80,000 (MCT)	GrantsGrants	MCT
Project Evaluation Costs	Mid-term and final evaluations	80,000	80,000	Grants	NA	NA	NA	NA
Project Management	4.76%	445,000	395,000	GrantsGrants	Public Source	50,000 (R&D)	Grants	R&D
Indicative total cost (USD)		9,393,350	8,583,350	810,000				

C.2.1 Financing structure (if applicable, mandatory for private sector proposal (max.300 words))

For private sector proposals, provide an overview (diagram) of the proposed financing structure. Please note that this section should focus on describing what is being paid for, either by GCF funding and/or co-financing.

C.3 Capacity Building and Technology development/transfer

If the project/programme is envisaged to support capacity building and technology development/transfer, please specify the total requested GCF amount for these activities respectively in this section.

C.3.1 Capacity building Amount: 1,596,000 ___ USD

C.3.2. Technology development Amount: 3,173,400 ___ USD

C.4. Justification for GCF funding request (max. 500 words)

As a Small Island Developing State, the FSM faces vast developmental challenges. These challenges include a limited resource base that is characterized by its incompatibility with economies of scale and sustained economic growth; small domestic markets with heavy dependence on a few external and remote markets; high cost of energy, infrastructure and transportation; constrained private sector development; limited productive use of land; limited institutional and technical capacity; and apparent rate of gender-based violence and inequality; widely dispersed geography; low resilience to natural disasters and a fragile natural environment. Taken as a whole, these challenges make the FSM highly vulnerable to external shocks and heavily dependent on overseas aid, thus forming a

formidable barrier to sustainable development. The proposed project is one of the top ten priorities included in the Overseas Development Assistance nation-wide priority list.

Food security is already a major area of work for FSM. The work is being conducted largely through the National Department of Resources and Development at the national level, as well as through the State governments. FSM has developed both a food security and climate change policy, and in some areas, has identified specific measures to increase the resilience of those affected by cross-cutting impacts. Despite strong political will, the Government of FSM does not have resources to meet the challenges caused by climate change. FSM is an under-resourced country that is highly dependent on the US Compact of Free Association (COFA) funding. The COFA currently funds 80% of State budgets and over 90% of its funding is allocated for health and education. After 2023 when the current phase of financial support is due to expire, and if not renewed this funding source will be severely curtailed leading to an estimated annual financing gap of about USD 41 million (35-45% of current national government expenditures). Negotiations for renewal of the COFA are underway, but it is uncertain what amounts will be available for what purposes at this stage.

The FSM Congress has appropriated approximately of \$500,000 (FY2012 – FY2018) in the national budget for food security projects (mostly for food and coconut security rehabilitation). The recommended budget line item for agriculture and food security for 2019 is estimated at \$473,314 declining to \$385,000 in 2020 and 2021. According to the Department of Resources and Development, these figures are not nearly enough and does not sufficiently address the FSM agriculture and water security issues.

Despite the limited national and State budgets for food security and climate adaptation, FSM has been successful at developing limited opportunities for external funding. The Readiness for El Nino Project, funded by the European Union and Implemented by the Secretariat of the Pacific Community (SPC) is valued at \$1.8 Million and is focusing on water security, covering one out of the nineteen islands in the State of Yap. The \$9 million dollar Enhancing the Climate Change Resilience of Vulnerable Island Communities in Federated States of Micronesia through the Adaptation Fund and implemented by SPREP is focusing on water security and covering two islands in each of the three States of the FSM (on Kosrae the focus is on rebuilding the roadway) . An additional project was the USAID funded Climate Adaptive Agriculture and Resilience Project (CAAR) (\$556,264) that focused on enhancing food security through traditional crops coupled with nutrient-rich vegetables, promotion of rainwater-harvesting systems and water conservation, and promoting resilient household livelihood opportunities (additional projects can be seen in Annex 13). However, the available funding for food and water security in a country so prone to the effects of climate change is seriously lacking.

The FAO vulnerability assessment report summarized it best when it concluded that “the critical issue is the need for adequate financing and incentives to encourage investment. FSM agriculture sector will require dedicated and sustained financial resources if there is to be transformational change to put a nation on a climate resilient footing.”¹⁰⁶

On top of the funding gaps, there is a need for GCF involvement as a convening element for the current fragmented approach to climate finance. In total, an estimated 60.9% of all climate finance in FSM has been provided directly to executing and implementing agencies (government entities and non-governmental or civil society organizations) and was not reflected or channeled through the national government’s budgeting and financial system. Further both the Second National Communication and the USAID Financial Assessment highlighted the issue of one-off uncoordinated projects falling short of addressing country wide issues and creating lasting impact. In the program and policy areas undertaken to date, there is yet to be a holistic and nation-wide examination of how the food security sector will be impacted by climate change sufficiently thorough to provide an evidence base for future work and to direct adaptation measures. The GCF involvement will allow FSM to establish a ‘whole of system’ methodology using the four pillars (availability, accessibility, utilization and stability), highlighting in particular the relationship between the urban, rural and neighboring island communities in FSM; and developing an integrated approach that combines social vulnerability (including traditional and gender approaches) and technical climate change impact analysis.

The combination of limited government financing and the need for effective coordination and country wide orchestration of focused adaptation and food security initiatives highlights a key opportunity for a GCF grant to catalyze sustaining impact and resiliency for FSM.

¹⁰⁶ FAO Climate risks, vulnerabilities and impacts of climate change on the agricultural sector in FSM: Assisting Small Island States to Integrate the Agricultural Sectors into Climate Change Priorities and Nationally Determined Contributions (2020); Draft available in Annex 13

C.5. Exit strategy and sustainability (max. 300 words)

The current SAP proposal is being designed with the explicit purpose of ensuring the sustainability and replicability of results. Past attempts at one-off pilot projects have failed to provide a system-wide solution to increasing the resilience of FSMs most vulnerable communities to food insecurity in the face of climate change. The opportunity provided through GCF support will allow for targeting multiple barriers at one time, which will include strengthening the enabling environment, providing an evidence-base for specific interventions, developing new opportunities for market access and development, and targeting new CSA techniques and opportunities for income and food security to a substantive portion (63%) of the FSM population. Overall, the project is expected to become the critical foundation for sustained efforts on food security as part of the national response to climate change. This project will especially build the political framework and commitment through State/national agriculture policies, social and market structures for CSA, as well as capacity for farmers, advisors, and others throughout the agricultural value chain that will enable future initiatives for food security to build off, particularly for other sectors like fisheries and livestock. Specific project activities and structural components that enable long-term sustainability of project components include:

- **Mainstreaming of climate change into National and State policies** – By integrating climate change adaptation more deliberately into national policies and planning, particularly the national and State agriculture policies, the project can ensure focused institutional attention for maintaining momentum built by project interventions. Recommendations for policy integration will include such measures as a government mandate that only locally grown food will be provided to students and patients at local hospitals (to the best extent possible taking into account individual dietary needs and restrictions) as part of FSM’s efforts to ensure sustainability of demand. Further, the structure provided by the new policy changes, will cement a focus on CSA within national and State priorities which is critical for supporting future and ongoing efforts in the local authorities in FSM as many of the local authorities are very small and rely on resources and efforts from the State level actors to set priorities and scope future projects. Notably, one of the key climate resilience measures to be integrated into national and state level policies is to assist local authorities in cases where mangrove restoration/protection is identified as a necessary activity for a local CSA package. For any CSA package where mangrove restoration/protection is required, MCT will work with local government officials to enact an ordinance that will put this area under permanent protection and have the area officially registered as part of FSM’s Nationwide Protected Areas Network in order to receive annual technical and financial assistance from the FSM National and State governments.
- **Nurseries and seedbanks** – Developing nurseries and seed banks ensures longevity of project impact by creating a self-sustaining supply of climate resilient seed varieties that can be distributed to communities and households both proactively and post-disaster. These systems provide an additional measure of resiliency that can support and sustain project components for food security even if there are larger shocks to a specific State or community. To ensure the sustainability of the nurseries and seed banks by running these through the farmer’s associations as businesses. The selling of seedlings can support operational costs and further support the associations.
- **Establishment of PSGs, farmers associations and agricultural networks** – These institutions provide a forum for adaptive management and long-term knowledge and innovation sharing across States as well as a vehicle for directly reaching communities and households and upscaling market value chains.
- **Development of business models for sustainable financing** – By leveraging structure and elements of existing business models (PGS) and initiatives for local food production (IFCP) the project will work to develop sustainable financing models to help sustain project impacts beyond initial GCF investment.
- **Market awareness and access** – By developing new awareness and opportunities for market participation for household farmers, the project is creating new structures (both formal and informal) and a positive feedback loop that will provide financial incentives to replicate results. Additionally, the success of these markets and structures creates best practices that can be leveraged to drive additional market development beyond the initial project impact. Through Component 3 farmers will be connected to local businesses and the project will support the creation of an agreement for farmers to provide a consistent supply of locally grown produce. This will increase business confidence in local farmers and their produce, which will in-turn increase demand.

- **Tailored trainings for households** – The project includes a wide variety of targeted trainings, most notably on use of climate information, utilization of climate-smart agroforestry practices, household food processing, market access and valorization, etc. all of which are skills that can and will be utilized by the communities and households to sustain food-security components beyond project life.
- **Training and capacity building for communities and governments** – The project also targets trainings and capacity building specifically for associations and government actors to manage and operate the project components beyond initial GCF involvement including training on the climate data systems, nursery management and care, and agroforestry.
- **National Implementation** – The project is being implemented nationally utilizing local partners government institutions and an academic/research institution to minimize the use of international consultants. The project will utilize local systems and expertise already in place to mainstream climate considerations. The structure of implementation will have a lasting impact on those experts working in the agriculture sector to ensure climate considerations are incorporated across research, trainings, policy development and implementation moving forward.

C.6. Financial management/procurement (max. 300 words)

The project will utilize MCT's procurement systems in-line with its accreditation. All financial management and procurement, including financial accounting, disbursement methods and auditing will be specified under the Funded Activity Agreement (FAA) and will be aligned with the process and method agreed in the accreditation master agreement (AMA).

The GCF will transfer funds annually to MCT on the basis of a disbursement schedule as outlined in the project proposal and relevant agreements. MCT will open a designated account managed by MCT to receive the GCF funds. All relevant expenditures will be charged directly to the designated account. MCT's Board level must approve any procurement over USD 10,001. MCT will be responsible for ensuring that project funds are spent according to the funding project proposal and the above-mentioned agreements that will be entered with the GCF. Internal reviews or audits will take place at the end of project implementation.

An annual project audit will be undertaken as well as a final project audit. The audits will include an audit of MCT's procurement process for the project.

D. LOGIC FRAMEWORK AND MONITORING, REPORTING AND EVALUATION

This section refers to the project/programme's logic framework in accordance with the GCF's [Performance Measurement Framework](#) under the [Results Management Framework](#) to which the project/programme contributes as a whole, including in respect of any co-financing. This is different from the project/programme-level log frame(as there may be other impact measures for example that go beyond those defined by the GCF).

A project-level logical framework, with specific indicators, baselines and targets, means of verification and assumptions should be provided as part of Annex 2.

D.1. Paradigm shift objectives (max.200 words)

<p><i>Increased climate-resilient sustainable development Increased climate-resilient sustainable development</i></p>	<p>This project helps to improve the climate resiliency of 68,250 beneficiaries in FSM (63% of the population) by providing additional detail, training and coordination on climate change and climate vulnerability and providing new opportunities for improved food security through deployment of CSA techniques, improved market access, awareness building for local produce and nutrition, and reserve capacity for bridging periods.</p>
<p><i>Choose appropriate expected result</i></p>	<p><i>Elaborate on the paradigm shift objectives to which the project/programme contributes.</i></p>

D.2. Impacts measured by GCF indicators

Select the appropriate impact for the project/programme. Note that more than one indicator may be selected per expected impact result. Add results as appropriate.

Expected Result	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term (if applicable)	Final	
Increased climate resilient sustainable development	Total number of direct and indirect beneficiaries; number of beneficiaries relative to total population	Household surveys, workshop and training minutes, inventory of CSA packages	2,466 people (1,233 men/1,233 women)	32,500 people directly supported with improved adaptation and climate resiliency (30% of total population) (16,250 males, 16,250 females).	68,250 people directly supported with improved adaptation and climate resiliency (63% of total population) (34,125 males, 34,125 females). 112,640 indirect beneficiaries (all of FSM population benefiting better nutrition and reserve capacity)	The project can be effectively implemented to improve climate resiliency by providing additional detail, training and coordination on climate change and climate vulnerability and providing new opportunities for improved food security through deployment of CSA techniques, improved market access, awareness building for local produce and nutrition, and reserve capacity for bridging periods.
<i>A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions</i>	<i>A1.1 Change in expected loss of lives and economic assets (USD) due to the impact of extreme climate-related disasters in the geographic area of the</i>	Household surveys Effectiveness of Training through pre/post tests	6 million USD of major crops are estimated to be vulnerable to disaster loss ¹⁰⁷	567,000 USD of major crops avoided losses due to CSA packages and other project activities supporting resilient planning and operations for farmers and farming groups. ¹⁰⁸	USD 1,512,000 of avoided losses due to CSA packages and other project activities supporting resilient planning and operations for farmers and farming groups. ¹⁰⁹	CSA packages include specific activities for supporting resilience to extreme events, particularly king tides (i.e. raised taro beds, different varieties, etc.).

¹⁰⁷ World Bank – FSM Country Risk Profile. Last Accessed 22 August 2020.

¹⁰⁸ The project is targeting 63% of the population and assumed at least 63% of the major vulnerable crops. The CSA activities are estimated to be able to improve security for 15% of the major crops at midterm. \$6 million exposed * 0.63 * 0.25 = an estimated \$945,000. The project will also be increasing the value of existing crop assets by establishing new market value chains.

¹⁰⁹ The project is targeting 63% of the population and assumed at least 63% of the major vulnerable crops. The CSA activities are estimated to be able to improve security for 40% of the major crops at end of project. \$6 million exposed * 0.63 * 0.25 = an estimated \$1,512,000. The project will also be increasing the value of existing crop assets by establishing new market value chains.

	<i>GCF intervention</i>					
<i>A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions</i>	<i>A1.2 Number of males and females benefiting from the adoption of diversified, climate resilient livelihood options (including fisheries, agriculture, tourism, etc.)</i>	Quantitative Surveys: Independent Household surveys	1,040 male 1,040 female	10,238 female, 10,237 male	23,888 female, 23,887 male	Local communities are directly engaged with new opportunities for climate smart agriculture and supported to adopt and utilize these practices Communities are interested and willing to participate in identification, planning implementation and maintenance of project activities.
		Livelihood Coping Strategy Index (LCSI) ¹¹⁰	To be determined during Year 1 implementation	30% of HH with improved LCSI scores	60% HH with improved LCSI scores	
		<i>Increased crop diversification</i> Quantitative assessment through farmer surveys	To be determined during year 1 of implementation (activity 1.2.3)	30% increase in percent of HHs planting new crops promoted by project CSA packages developed under activity 2.1.1	70% increase in percent of households planting new crops promoted by project CSA packages developed under activity 2.1.1	
		<i>Mass of food-crops harvested from</i>	0 kg/ha	50-100 kg/ha	150-200 kg/ha	

¹¹⁰ The Livelihoods-based Coping Strategies Index (LCSI) is used to better understand longer-term household coping capacities. The LCSI therefore provides a measure of the different types of livelihood-related coping strategies that households may engage in in order to ensure their food needs are met and ensure their survival. It ranks these coping mechanisms by how costly it may be to their livelihoods and ability to cope with shocks in the future. Strategies are classified into three broad groups namely: 1. Stress strategies: such as borrowing money or spending savings, are those which indicate a reduced ability to deal with future shocks due to a current reduction in resources or increase in debts; 2. Crisis strategies: such as selling productive assets, directly reduce future productivity, including human capital formation; 3. Emergency strategies: such as selling one's land, affect future productivity, but are more difficult to reverse or more dramatic in nature. https://documents.wfp.org/stellent/groups/public/documents/manual_guide_proced/wfp211058.pdf

		<i>demonstration gardens</i>				
		<i>Number of HHs utilizing soil erosion practices promoted by project CSA packages developed in 2.1.1</i>	To be determined during year 1 of implementation (activities 1.2.1 and 1.2.2)	40% targeted HHS	70% targeted HHS	
		<i>Soil erosion level increase after CSA packages deployed</i>	Baseline: measurement of rate of erosion prior to CSA package	10% decrease in rate of soil erosion from baseline	30% decrease in rate of soil erosion from baseline	
		<i>Farmer direct beneficiaries experience an increase in crop yields</i>	To be determined during year 1 of implementation (activity 1.2.3)	At least 10% relative to average historical yields from agricultural intervention	At least 30% relative to average historical yields from agricultural interventions	
<i>A2.0 Increased resilience of health and well-being, and food and water security</i>	<i>A2.2 Number of food secure¹¹¹ households (in areas/periods at risk of climate change impacts)</i>	<i>Food Consumption Score (FCS)¹¹² disaggregated by sex of household head</i>	To be determined during Year 1 implementation	50% HH with acceptable FCS	80% HH with acceptable FCS	During storm surges or other disaster incidence, targeted beneficiaries able to access seed banks and nurseries; Inter-island markets can
		<i>Food Expenditure Share (FES)¹¹³</i>	32-76% of HH expenditures	10% decrease in share of HH expenditures	15% decrease in share of HH expenditures	

¹¹¹ This project utilizes the FAO four pillars framework to measure food security namely accessibility, availability, stability, and utilization of locally grown food. Food AVAILABILITY addresses the “supply side” of food security and is determined by the level of food production, stock levels and net trade. ACCESS focuses on incomes, expenditure, markets and prices in achieving food security objectives. UTILIZATION is commonly understood as the way the body makes the most of various nutrients in the food. Sufficient energy and nutrient intake by individuals is the result of good care and feeding practices, food preparation, diversity of the diet and intra-household distribution of food. Even if your food intake is adequate today, you are still considered to be food insecure if you have inadequate STABILITY in access to food on a periodic basis, risking a deterioration of your nutritional status. During storm surges or other disaster incidence, targeted beneficiaries able to access seed banks and nurseries; Inter-island markets can withstand climate impact

¹¹² The household Food Consumption Score (FCS) is used as a proxy for household food security and is the core indicator for consumption recommended by WFP. It is a measure of dietary diversity, food frequency and the relative nutritional importance of the food consumed. FCS is calculated using a weighted frequency of consumption of different food groups consumed by a household during the 7 days before the survey. https://fscluster.org/handbook/Section_two_fcs.html

¹¹³ The Food Expenditure Share (FES) is based on the premise that the greater the importance of food within a household’s overall budget (relative to other consumed items/services) the more economically vulnerable the household. The FES is constructed by dividing the total food expenditures

						withstand climate impact
		<i>Increase in Individual Dietary Diversity Score (IDDS)¹¹⁴</i>	To be determined during Year 1 implementation	5% increase for targeted HHs	10% increase for targeted HHs	
		<i>Percentage of HHs survival deficit¹¹⁵</i>	To be determined during Year 1 implementation	5% decrease in HHs survival deficit	10% decrease in HHs survival deficit	
		<i>Increase in availability of locally processed foods</i>	To be determined during Year 1 implementation	30% of HHS with access to locally processed foods	60% of HHs with access to locally processed foods	
		<i>Increase Household Dietary Diversity Score (HDDS)¹¹⁶</i>	To be determined during Year 1 implementation	5% increase in HDDS	10% increase in HDDS	
		<i>Dietary Diversity Score¹¹⁷</i>	To be determined during Year 1 implementation	50% HH with improved DDS	80% HH with improved DDS	

D.3. Outcomes measured by GCF indicators

Expected Outcomes	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term (if applicable)	Final	
A5.0 Strengthened institutional and regulatory systems for climate-	5.1 Institutional and regulatory systems that	National Coordination	0 climate risk integration in current	1 National Agriculture Policy revised to fully	4 State Level Agriculture policies revised to	National and State level governments committed to

by the total household expenditures. The FES is then categorized per group considering that households spending more than 75% of their income in food are severely food insecure, if the FES is between 75% and 65% households are considered Moderately food insecure and if FES is between 50% and 65% households are considered Marginally food insecure.

¹¹⁴ The indicator assesses the number of (pre-determined) food groups which were eaten by a specific target group the previous day or night. It is an indicator of a diet's micronutrient adequacy, an important dimension of its quality.

¹¹⁵ The total food and cash income required to cover the food and non-food items necessary for survival in the short term. It includes (1) 100% of minimum food energy needs and (2) the costs associated with food preparation and consumption (https://fscluster.org/handbook/Section_two_survival.html).

¹¹⁶ HDDS is a proxy measure of household food access. HDDS is calculated based on questions on household consumption of food items from 12 different food groups in previous 24 hours.

¹¹⁷ The household Diet Diversity Score (DDS) provides an estimation of the quality of diet by measuring the number of different food groups (out of 7 total) consumed over a given period (7 days). https://fscluster.org/handbook/Section_two_hdds.html

responsive planning and development	improve incentives for climate resilience and their effective implementation.	Committee reports Project Implementation progress reports Review of level of climate risk integration	Agriculture Policies at State and National level do not integrate climate risk	integrate climate risk and create a better enabling environment for supporting investment and planning in climate smart agriculture	integrate climate risk to ensure State-level planning and investment in climate smart agriculture is facilitated (State-level investment committed to CSA after policy approved in USD)	updating and implementing policy
	5.2 Number and level of effective coordination mechanisms	Meeting minutes Charter documents	0 national coordinating mechanism is in place for agriculture	1 National coordination mechanism in agriculture is established with at least 50% of participants being female (Effectiveness level 1)	1 National coordination mechanism in agriculture is established with at least 50% of participants being female (Effectiveness level 3)	National government entities and are willing to engage in establishment processes
A6.0 Increased generation and use of climate information in decision-making	6.2 Use of climate information products/services in decision-making in climate-sensitive sectors	Farmer surveys Meeting Minutes Review of operational policies Project Implementation progress reports	Climate information products and services are not tailored to farmers and not used in agricultural decision-making	Climate information packaged and tailored to farmers. New and updated communications products are tailored and disseminated for farmers ultimately supporting end-user decision-making to improve income and livelihoods for small-holder farmers across 2 States	Climate information packaged and tailored to farmers. New and updated communications products are tailored and disseminated for farmers ultimately supporting end-user decision-making to improve income and livelihoods for small-holder farmers across all 4 States	Farmers willing to make changes based on climate information

<p>A7.0 Strengthened adaptive capacity and reduced exposure to climate risks</p>	<p>7.1: Use by vulnerable households, communities, businesses and public-sector services of Fund supported tools, instruments, strategies and activities to respond to climate change and variability</p>	<p>Quantitative surveys: Household surveys Training attendance and effectiveness through pre/post-test</p>	<p>390 HH utilize climate smart agriculture techniques to improve farming decisions</p>	<p>4,760 HH (30% of targeted HHs) use climate-smart agriculture packages to improve decision making for agriculture.</p>	<p>12,694 HH (80% of targeted HHs) (use climate-smart agriculture practices to improve decision making for agriculture</p>	<p>Farmers are willing to undertake adaptation measures and modify their current farming and pastoralist practices;</p>
		<p>Quantitative assessment through farmer surveys</p>	<p>To be determined during year 1 of implementation (activity 1.2.3)</p>	<p>Farmer direct beneficiaries experience an increase in crop yields of at least 10% relative to average historical yields from agricultural intervention</p>	<p>Farmer direct beneficiaries experience an increase in crop yields of at least 30% relative to average historical yields from agricultural interventions</p>	
		<p>Quantitative assessment through farmer surveys</p>	<p>Annual subsistence income from agriculture USD 395</p>	<p>Improve agriculture income by at least 5%</p>	<p>Improve agriculture income by at least 10%</p>	
<p>A8.0 Strengthened awareness of climate threats and risk-reduction processes</p>	<p>8.1: Number of males and females made aware of climate threats and related</p>	<p>Farmer/ household surveys Training attendance</p>	<p>1,500 females and 1,500 males aware of climate threats and have</p>	<p>10,238 females and 10,237 males or 30% of targeted beneficiaries aware of climate</p>	<p>23,888 females and 23,888 males or 70% of targeted beneficiaries aware of climate</p>	<p>Targeted communities engaged and willing to implement new techniques</p>

	appropriate responses		tools/capacity to respond	threats and have tools/capacity to respond	threats and have tools/capacity to respond	
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D.4. Arrangements for Monitoring, Reporting and Evaluation (max. 300 words)

Project-level monitoring and evaluation will be undertaken in compliance with the MCT's M&E Policy. The primary responsibility for day-to-day project monitoring and implementation rests with the Project Manager. The Project Manager will develop annual work plans to ensure the efficient implementation of the project. The Project Manager will inform the Project Steering Committee (PSC) of any delays or difficulties during implementation, including the implementation of the Monitoring & Evaluation (M&E) plan, so that the appropriate support and corrective measures can be adopted. The Project Manager will also ensure that all project staff maintain a high level of transparency, responsibility and accountability in monitoring and reporting project results.

A project inception workshop will be held to: a) orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project implementation; b) discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms; c) review the results framework, re-assess baselines as needed, and discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E plan; d) review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; e) plan and schedule PSC meetings and finalize the first year annual work plan.

A project implementation report will be prepared for each year of project implementation. The Project Manager, R&D, and MCT will provide objective input to annual reports. The Project Manager will ensure that the indicators included in the project results framework are monitored annually well in advance of the annual report submission deadline.

The PM will oversee the process of hiring an external expert to carry out the MTR, which will provide an assessment of project performance at the project's mid-point. This will be a formative exercise and will include analyzing whether the project is on track, what problems and challenges the project is encountering, and what corrective actions are required for the project to achieve its intended outcomes by project completion, in the most efficient and sustainable way. The PSC will participate in the MTR process and develop a management response to the review's recommendations, along with an implementation plan. It is the responsibility of MCT to monitor whether the agreed recommendations are being implemented during the remainder of the project's operational life.

An independent mid-term evaluation will be undertaken during year 3 of project implementation. An independent final evaluation will take place no later than three months prior to operational closure of the project. The draft mid-term and final evaluation reports will be sent to project stakeholders during a consultation process and the mid-term and final evaluation report will be cleared by MCT and will be approved by the PSC. Both the mid-term and final evaluation reports will be made publicly available on MCT's website and elsewhere to ensure wide dissemination.

E. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

E.1. Impact potential (max. 300 words)

E.1.1. Expected tons of carbon dioxide equivalent (t CO ₂ eq) to be reduced or avoided (Mitigation and cross-cutting)	Annual	Click here to enter text. tCO ₂ eq
	Lifetime	Click here to enter text. tCO ₂ eq
E.1.2. Expected total number of direct and indirect beneficiaries, disaggregated by gender (Adaptation and Cross-cutting)	Direct	68,250 50% female
	Indirect	112,640 50% female
		<i>*For both, Specify the % of female against the total number.</i>
	Direct	63% (Expressed as %) of the country

E.1.3.Percentage of beneficiaries relative to total population	Indirect	112,640 (100%) of the country
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E.1.4.
 The project will predominantly mostly focus on strengthening the adaptive capacity of the communities and households mostly through improving food security for household farmers, deploying new climate adapted technology, practices, and varieties, creating new value chains and linkages for market access for local produce, preventing acute and sustained loss of crops and arable land, and providing for improved income availability and stability. In total, the project will directly improve the adaptive capacity of an estimated 68,250 individuals. In addition to the adaptive capacity benefits, the project will also be improving anticipatory and absorptive capacity for communities and households by 1) providing descaled vulnerability assessments to advise agricultural and other decision making; 2) developing new climate-resilient agricultural packages for communities and households; 3) improving national capacity and strategic consideration of climate change in agricultural policymaking; and 4) increasing savings, efficiency, and net income through production and marketing support, associations, and improved support and advisor networks.

E.2. Paradigm shift potential (max. 300 words)

The agriculture and food security sectors in FSM are currently characterized by massive participation in subsistence agriculture (63% of the population engaging in agriculture), limited to no market development for local agriculture products (Only 24% of FSM farmers have ever sold their goods), high and growing proportions of income spent on food purchases (32-76% of incomes spent on food), increasing reliance/preference for imported food (17-43% of household diets from imported food), and growing food and overall poverty (40% live below national poverty line and 10% live below food poverty line). The status quo for FSM suggests major risks for the four pillars of food security availability (loss of arable land from inundation, loss of groundwater resources, destruction of crops and cropland, potential increase in pests), access (lower yields and high prices for local food compared to imports), utilization (decrease in caloric availability due to loss of subsistence crops, high prevalence of NCDs, shifting preferences for imported food), and stability (increased extreme event and flooding, strained systems from abandoning low-lying islands, lack of storage or buffer capacity).” By decreasing supply (both acute and long-term), climate change severely exacerbates other food security issues particularly demand for imports, prices of local foods, health impacts and nutrition, and supply stability of subsistence crops

Compounding this, FSM’s economy, particularly the agriculture sector, is acutely vulnerable to the impacts of climate change, particularly loss of arable land, crop loss, and overall food insecurity stemming from saltwater intrusion from sea level rise and tidal surges, extreme rainfall and flooding, extreme heat, loss of agroforestry resources, and increased intensity of extreme events (see climate and food security baseline in Annex 13). To make matters worse, the governments in FSM lack both capacity and financial resources to effectively address both the growing issue of food security (access, availability, stability, and utilization) as well as the impending impacts of climate change. As well, previous one-off projects have ended up short of creating lasting impact at the national level. Finally, given the vulnerabilities of the recent COVID-19 pandemic has exposed, the need for stronger domestic food supplies will be needed to build the resilience of FSM against future infectious disease outbreaks.

This project is working to combat the underlying challenges and drive progress towards a more climate resilient future by:

1. Establishing an enabling environment for adaptive action and investment (institutional coordination, State/local vulnerability assessments, integration of climate change into State and national planning and policy, developing a network of farmer associations, and disseminating tailored communications for informed decision-making). This specifically will help to better target adaptation investments based on local vulnerabilities, improve technical capacity for climate smart planning and policy, cement political commitment and accountability for CSA, and drive informed decision-making for farmers, all of which will increase the adaptive and anticipatory capacity of FSM and lay the foundation for improved strategic planning for food security and climate resiliency.
2. Enhancing the food security of vulnerable households by introducing CSA practices (establishing agroforestry systems, capacity building for extension agents, awareness building and training for FSM households, and developing reserve capacity for climate disruption). This will increase availability, stability, and accessibility of locally grown food for food security, improve nutritional outcomes for vulnerable households, develop new opportunities for income and household productivity, and drive a national change in awareness and utilization of CSA for improved resiliency.

3. Strengthening climate-resilient value-chains and market linkages across the agriculture sector (development of new markets for local agriculture, enhanced food processing and preservation, and increasing awareness and consumption of local food). This will strengthen climate resilient value chains across the agriculture sector, improve food security gaps through storage and processing, significantly transform opportunities for improved livelihoods thereby driving increased adaptive capacity, and create a strong incentive framework for local farmers to leverage CSA packages beyond the life of the project to secure a long-term shift towards improved climate resiliency with regards to food security.

The overall intervention will support a paradigm shift for FSM mostly through the **promotion of resilient agriculture** the tailored climate smart-agriculture packages will support adaptation and climate-resilient interventions to reduce the shock of a changing climate on agricultural productivity. The targeted interventions through Component 2 are designed to respond directly to key regional climate hazards and the specific risks they pose to subsistence farmer households across FSM all while building more resilient communities. Interventions supporting adaptation and productivity will be targeted toward unique farmer groups and will include improved climate-resilient varieties, innovative adaptation practices and technologies, diversification, and explore business models to ensure these practices are financially viable in the long-term.

A secondary paradigm shifting pathway the project will support is **facilitating climate informed advisory for mainstreaming climate considerations in agricultural management**. As outlined above, FSM farmers lack access to critical information about daily weather, what future climate risks they face, and what they should do about these risks. Through output 1.5, this project will support farmers to proactively respond to climate hazards.

A third paradigm shifting pathway that the project will tangentially address is to **reconfigure the food system across FSM**. This is one of the longer-term impacts that the project is aiming to achieve. Through Component 3 the project will improve resilience to climate threats by improving the overall supply chain for food/crops, build awareness for local thereby shifting consumption towards healthier and more environmentally friendly diets foods (output 3.3), and building better supply chain resilience through enhancing food processing and preservation (output 3.2).

Overall, the project is expected to become the critical foundation for sustained efforts on food security as part of the national response to climate change. The project supports a shifting pathway for FSM by **Promoting Resilient Agriculture** through climate-resilient interventions to reduce the shock of a changing climate on agricultural productivity. The proposed resilient agriculture interventions will directly respond to key regional, national and local climate hazards and the specific risks they pose to agricultural production, while building more resilient communities. The interventions outlined in this project will support adaptation and productivity targeted toward unique farmer groups to introduce improved climate-resilient varieties, innovative adaptation practices and technologies, diversification, and explore business models to ensure these practices are financially viable in the long-term.

This project will transform the landscape for the terrestrial agriculture sector across FSM, creating linkages across States that never existed, building the political framework and commitment through State/national agriculture policies, developing social and market structures for CSA, and transforming the capacity for farmers, advisors, and others throughout the agricultural value chain to enable future initiatives for food security to build off, particularly for other sectors like fisheries and livestock.

All of this is directly working to overcome the current barriers and increase the resilience of FSM's most vulnerable communities to food insecurity in the face of climate change (see Annex 14 – Theory of Change)

Overall, this project contributes directly to the pathways for climate adaptation and food security in FSM. Most notably FSM's strategic development priorities outlined in the FSM Strategic Development Plan, the adaptation objectives outlined in the National Climate Change Policy, second national communication on climate change, and Statewide Assessment and Resource Strategies; as well as the agriculture development goals outlined in the National Agriculture Policy (more detail on specific objectives from these policies is included in the Country Ownership section below).

Initially the project will directly impact 63% of the FSM population. At this scale the project can create clear demonstrable success that can be replicated for remaining communities in FSM, particularly with regards to establishing markets, effectively integrating climate-smart agricultural practices in household farming, and leveraging

climate information for decision making at the State and local levels. The project will also directly contribute to the larger growing body of knowledge on proactively addressing food security and climate change in vulnerable Pacific Island States, which can further support scaling and replication of project interventions beyond FSM. Key learning elements for this project that can be leveraged further in FSM and more broadly include:

- Effectiveness of specific climate-smart crop varieties and climate-smart agroforestry techniques and practices
- Best practices for dissemination of climate information to disparate actors for localized agricultural decision making
- Empowering vulnerable households, particularly female-led households to proactively adapt to climate change and drive nutritional and food security for their families
- Best practices for developing local markets for agriculture

The project also works to support a number of innovative pathways and interventions for FSM as detailed below:

- Multiple gap assessments have highlighted the issue of a lack of integration of climate change considerations into national/state level agriculture policy, planning, and coordination, and this project works to deliberately address these gaps by directly integrating climate change into the various mechanisms representing the first time that climate change will be operationalized into agriculture policy and planning in FSM
- The project aims to develop the first comprehensive downscaled vulnerability assessments for climate change in FSM which will help to support planning, strategy, and decision-making for both national/state level policymakers and local communities.
- FSM does distribute some climate and weather information currently, but for the most part the disseminations are data heavy and difficult for farmers to access and utilize for effective decision-making and planning. This project enhances those information streams/products to be better tailored for farmers which represents an innovative and more formal agriculture activity for most of the farming households.
- This project represents the first nationwide holistic project on integrated agriculture and food security and represents a significant departure from the previous one-off uncoordinated projects.
- The CSA packages envisioned by the project incorporate crop varieties and adaptive farming techniques that are new to FSM farmers, while also improving the specific integration of climate change into traditional techniques and varieties. Both of these strategies will help to improve resiliency of livelihoods and food security for local farmers in FSM
- Extension agents will be directly trained on climate change impacts and particularly the tailored climate responsive techniques envisioned in the CSA packages. This training will be novel for most of the extension agents and will enable greater dissemination and knowledge building for local communities as well.
- The project is also introducing innovative storage and processing techniques to farming households to enable improved income opportunities, but also importantly enhanced bridging capacity for households and communities.
- Like the storage and processing techniques, the project will further be developing new pathways for bridging capacity and support to local farmers through the development of the nurseries and seed banks to ensure sustainable access and availability of climate resilient varieties.
- FSM has long had shortages of local produce in hotels, restaurants, and importantly initiatives like school lunch programs, so this project works to connect the farming households to these value chains and end users as well as in general to markets (most for the first time as highlighted above).
- The PSG model has been piloted successfully for certain geographies and crops (i.e. Coconuts for Life), but this project works to expand the reach of the model to new communities and importantly to new crops as well which will improve income opportunities and entrepreneurship for small holder farmers.

E.3. Sustainable development (max. 300 words)

In addition to the climate resiliency outcomes described above, the project's interventions also drive wider social and environmental benefits and directly contribute to sustainable development goals in FSM.

Environmental co-benefits: By preserving arable land and promoting and providing training for sustainable agroforestry practices the project can help avoid deforestation (particularly of barrier ecosystems like mangroves) and land-clearing for agriculture. Promoting CSA also supports soil/water conservation and improvements to the soil and water quality for FSM ecosystems and communities which can support greater productivity from existing systems.

The project also supports expanded capacity for food processing and storage which can reduce food and environmental waste streams. Sustaining forest ecosystem can also support biodiversity conservation for FSM which plays a key role in tourism. There are also nominal GHG reductions from the reforestation and soil restoration efforts.

Socioeconomic co-benefits: In focusing on expanding local agriculture production, creating new market opportunities, and promoting local food options for households, the project will directly improve both income and nutritional outcomes for households by providing nutritious and cost-effective alternatives to imported food. In addition to decreased expenditures on imports, the market linkages envisioned by this project also create new opportunities for income generation for households. Improved diets also will reduce healthcare expenditures for NCDs over time. New jobs will also be supported throughout the agricultural value chains. As above, expanded storage and processing capacity will create opportunities to more efficiently utilize produce economically or for self-consumption which can improve nutritional outcomes and save money. Finally, the project also provides expanded opportunities for education and engagement with youth, particularly with regards to agriculture and climate change.

Benefits are mostly qualitative at this point as specific benefit numbers will depend on the ultimate content of the selected CSA packages.

An overview of the project's impact on progressing SDGs in FSM includes:

- SDG 1 – Poverty alleviation through new income opportunities and reduction of household expenditures on imported food
- SDG 2 – Greater food security for households
- SDG 3 – Reduction in NCDs through greater availability and utilization of nutritious produce
- SDG 5 – Targeted opportunities for female led households and women's groups promoting the advancement of women and gender-sensitive development impacts
- SDG 8 – As above, jobs will be created and improved for local household farmers through facilitation of market access and expanded opportunities for market participation
- SDG 13 – The core of the project is providing for climate resiliency and adaptation for communities
- SDG 15 – Conservation and integration of agroforestry techniques will help to avoid land and soil loss and conserve native ecosystems

Gender

In FSM, both climate change and food insecurity affect women and men differently, and indeed different strategies for adaptation and resiliency need to be developed for these beneficiary groups. In FSM female-led households on average are poorer and more reliant on subsistence farming and imports. The project specifically focuses on driving gender-sensitive development impact by targeting training and deployment of project activities to female-led households, especially in integrating CSA for household farming, leveraging household scale food processing techniques and driving awareness and uptake of local foods as an alternative to imported foods. The project will also ensure that these women are incorporated into committees, boards and associations where decision are taken, in order to bring their needs to the decision-making table. Additional details can be seen in the gender assessment in Annex 4.

In addition to the project's goals of 50% of direct beneficiaries/target households being women and female-headed households, key high level gender impacts include:

- **Increasing women's leadership and decision making in the agriculture sector** – This project through its focus on female headed households, its emphasis on ensuring women are part of the project leadership, and its commitment to cultivating women's leadership in running and managing State-level farmer's associations will contribute to increasing women's leadership and decision making in the agriculture sector.
- **Increasing economic opportunities for women** – The project will actively contribute to increased economic opportunities for women, particularly through Component 3: Strengthened climate-resilient value-chains and market linkages across agriculture sector. Specific business models will be developed to expand current women owned businesses ability to sell or buy agriculture goods. In addition, women trained with food processing techniques will be able to sell their goods in local farmer's markets that will be established through the project. These activities will allow the project to contribute to increasing economic opportunities for women and increasing their current livelihoods.
- **Reducing violence against women** – While the project is not actively targeting GBV, the project will proactively utilize UN-Women's [Guide to Support the Implementation of the Global Women's Safety Framework](#) to integrate into personnel onboarding for the project as well as through the development of

specific training modules to include for agriculture extension agents. Training will include, raising awareness of personnel and consultant on the topic, presenting strategies to prevent sexual harassment, familiarizing staff/consultants with equal opportunity policies, and detailing grievance mechanism procedures and how women's safety is considered in procurement or recruitment processes. Through the explicit integration and partnership with UN-Women the project **will contribute to a better understanding of violence against women and equip personnel working on the project with ways to reduce GBV.**

E+S Category C

The activities envisioned by the project include only activities that have minimal or no expected environmental and/or social risks and impacts. There are a few activities that could cause risk at larger scales. The project activities are not constructing new facilities, but rather utilizing existing facilities for storage and market activities. Further, the project CSA packages are all focused on small-scale deployments for smallholder farmers (majority of landowners operate on less than 2 acres), so the potential for negative impact from the applications is negligible. The project also incorporates organic farming training and awareness building into its CSA packages which will work to proactively reduce fertilizer usage for smallholder farmers. The specific E+S screenings are included in Annex 12. There is additional information on past similar projects to further justify the Category C designation available in Annex 13 of the FP. On this basis, MCT has confirmed the project status as a Category C project, subject to a number of exclusion criteria.

E.4. Needs of recipient (max. 300 words)

63% of FSM households reported conducting some form of agricultural activity¹¹⁸ and 43% of the labor force conducted agriculture as a primary or secondary activity with agriculture contributing 14% to overall household income. Nearly 40% of households produced goods purely for subsistence and only 24% of FSM households sold any part of their agriculture production. Over 74% of households indicated the main use of crops grown was for self-consumption. Across FSM, over 50 % of households with land for agriculture reported that they received no income from agriculture. Under half (48%) of the households with land for agriculture reported engagement in markets for purchasing their produce. 30% of farm households lived less than an hour from a market, but for 2.5% of households there was no market accessible or available. Around 9% of households with land for agriculture reported participating in product organizations in the past year.

At the national level, about 10% of the people in FSM spend below what is needed to secure a minimal health diet. About one-fifth of the FSM population lives in female-headed households and the incidence of poverty is higher in female-headed households than in male-headed households in all States. Food access, particularly for lower income areas and groups is also constrained in FSM. Across the four States, food expenditures make up significant portions of household spending particularly for the poorest quintiles who allocate 42-76% of their expenditures on food. Even the wealthiest quintiles, however, still allocate 32-45% on food. ¹¹⁹ Further, there is a large and growing demand for low-nutrition imported food as imported food, particularly bread, flour, and noodles, constitutes 17-43% of the households' diets in FSM.¹²⁰ The high prices and low consumption of local foods and reliance on imported food items has also made cash income a major factor in accessing food. Large household sizes, increased unemployment, and a decline in agricultural, livestock, and fisheries income have combined to drive more households below the national food poverty line where they are having to sacrifice other expenditures or resort to lower nutritional alternatives. With loss of arable land and population growth, low-income households are left with a growing issue of landlessness and an inability to grow food for subsistence. Climate change is further impacting these outcomes by causing crop loss, loss of arable land, and price/supply shocks mostly as a result of saltwater intrusion from sea level rise and tidal surges, extreme rainfall and flooding, extreme heat, loss of agroforestry resources, and increased intensity of extreme events. At least 60% of households with land for agriculture experienced some loss from weather, diseases, pests, or other reasons for any crop. 5-12% of households across the States reported issues with invasive species, 5-15% issues with flooding, 3-22% issues with sea water, and 2-47% issues with drought.

¹¹⁸ Traditional agriculture in FSM can be classified into the following categories based on their methods of cultivation and land use: a) mixed tree gardens, agroforests, or arboriculture, b) shifting cultivation (intermittent gardens, swiddens in forest or bush, including slash and burn systems), c) intensive open field agriculture in fern and grass savannas, including ditching for drainage, d) wetland taro systems for *Cyrtosperma chamissonis* and *Colocasia esculenta*, e) kitchen or backyard gardens, and f) animal husbandry.

¹¹⁹ Household Income and Employment Survey 2013/2014 Agriculture Factsheet; Available at:

<https://pafpnet.spc.int/attachments/article/806/FSM%20Agriculture%20fact%20sheet%20Final.pdf>

¹²⁰ FSMSSLP via Federated States of Micronesia Second National Communication on Climate Change; Available at:

<https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communication-to-the-UNFCCC.pdf>

Also, as discussed above in the “Justification of GCF Investment” section, FSM State and national financial capacity is extremely constrained, particularly when considering the magnitude of the threats of food insecurity and climate change. FSM’s National budget currently includes ~\$500,000 per year for food security projects, but that amount is both decreasing and insufficient to address the food security and agriculture needs. Outside funding has been leveraged in this space, but the funding amount is still inadequate to meet adaptation needs and further more than 60% of the funds go “uncoordinated” by national decision makers which further creates a void for effective and coordinated financing for climate adaptation and food security in FSM. As highlighted previously, the project also directly addresses the documented gaps (Pacific Islands Forum Secretariat and USAID Financial Assessment¹²¹, Second National Communication, FSM GCF Country Program¹²²) for technical capacity, government coordination/strategic direction, and targeting and implementation of adaptation investments.

The barrier assessment highlights a number of capacity constraints for FSM. The FSM GCF Country Programme¹²³ concluded that at present, none of the FSM States have a ‘high’ level of adaptive capacity required to ensure adaptation to the effects of climate change. Despite some variation in their adaptive capacities, all States are highly vulnerable due mainly to a combination of capacity issues to respond to climate impacts in a timely manner and the wide dispersion of the islands in the FSM which poses transportation, communication and development challenges for the nation, particularly for costs of goods and services, costs of energy and transportation, and scalability and connectivity of markets.¹²⁴ Further, institutional capacity to secure sufficient funds and implement coordinated adaptation and mitigation projects is also inadequate, making progress slow and challenging. This makes those living in rural areas, outer islands, and coastal communities especially vulnerable, given the long distances, at times unfavorable weather, logistics and challenges with the high cost of inter-island transportation making it particularly difficult to deliver assistance and implement projects. These constraints are echoed in the USAID Financial Assessment of Climate Change and Disaster Risk for FSM which identified several additional barriers and challenges¹²⁵ including: lack of government coordination on climate adaptation, limited budgets for operationalizing climate change, fragmented climate finance, a lack of capacity in national and State governments to effectively coordinate climate finance and adaptation priorities, and limited ability to build and sustain local capacity in a manner that is consistent and builds corporate knowledge.

A specific Audit on the Management of climate change and food security found no Comprehensive Action Plan to Address the Impacts of Climate Change on Food Security amongst government institutions and a duplication of efforts/overlapping activities between national and State as well as non-government organization (NGOs). GCF involvement will allow FSM to establish a ‘whole of system’ methodology using the four pillars (availability, accessibility, utilization and stability), highlighting in particular the relationship between the urban, rural and neighboring island communities in FSM; and developing an integrated approach that combines social vulnerability (including traditional and gender approaches) and technical climate change impact analysis.

This project will provide economic, social and environmental benefits through the delivery of its three primary components (enabling environment for adaptive investment, enhanced food security through CSA, and strengthened climate-resilient value chains and markets). It will focus on providing benefits to vulnerable communities in the four States of FSM who depend largely on their natural resources for their livelihoods and who are already facing the negative impacts of climate change. Direct community involvement in training, planning, and implementation of project activities will ensure direct alignment to local needs and ultimately help to address the needs of the most vulnerable communities by providing for increased resource availability, access to sources of protein and other nutrition, opportunities for income-generation and improved food security and climate resiliency.

¹²¹ FSM Climate Change and Disaster Risk Finance; Available at: <https://fsm-data.sprep.org/dataset/fsm-climate-change-and-disaster-risk-finance-assessment-%E2%80%93-2019>

¹²² GCF FSM Country Programme; Available at: <http://www.dofa.gov.fm/wp-content/uploads/2018/12/FSM-GCF-Country-Program-Endorsed.pdf>

¹²³ FSM GCF Country Programme; Available at: <http://www.dofa.gov.fm/wp-content/uploads/2018/12/FSM-GCF-Country-Programme-Endorsed.pdf>

¹²⁴ Pacific Possible: Long-term Economic Opportunities and Challenges for Pacific Island Countries. World Bank, Washington, DC.; Available at: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/168951503668157320/pacific-possible-long-term-economic-opportunities-and-challenges-for-pacific-island-countries>

¹²⁵ FSM Climate Change and Disaster Risk Finance Assessment; Available at: <https://fsm-data.sprep.org/dataset/fsm-climate-change-and-disaster-risk-finance-assessment-%E2%80%93-2019>

E.5. Country ownership (max. 500 words)

This project specifically aligns and supports the priorities and strategies of FSM's national planning and frameworks and has naturally embedded country ownership into the scope and concept of the project by systematically providing new pathways for increased domestic agricultural production, increased food security at the household and community level, increased uptake and utilization of traditional practices, supporting market access and development, and strengthening the adaptive capability of agriculture and households.

First, agriculture is one of the priority economic sectors identified under the FSM Strategic Development Plan 2004-2023 (SDP)¹²⁶ as a means of addressing food security and achieving development goals. The project specifically aligns with SDP's agricultural goals 1-4 (properly focused agriculture policy framework; increased production of traditional farming systems; increased volumes of saleable products in markets; and environmentally sound and sustainable production) as well as SDP's environmental goals 1 and 6 (mainstream environmental conditions including climate change into policy and planning; improve environmental awareness, education, and involvement of citizenry).

Achieving national food security, safety and nutritional health is also one of the priority goals outlined in the FSM National Agriculture Policy (2012-2016)^{127,128}. Specifically, the project supports the Policy's specific goals and strategies for mainstreaming climate change and resilience into the agriculture sector, increasing production of traditional farming systems to provide for household nutrition and incomes, and increased volume of saleable agricultural products.

The project's targeted outcomes also align with the second national communication on climate change is the principle framework for responding to climate change impacts in FSM and it highlights three key adaptation strategies that the present project endeavors to support: 1) conserving and promoting island and oceanic ecosystem services; 2) Preserving and promoting traditional culture to facilitate adaptation strategies and community accord; 3) Improving food and water security with a focus on domestic production as a core strategy in the National economy.¹²⁹

The second communication builds on the National Climate Change Strategy (2009)¹³⁰ which among other things established national goals to develop and implement appropriate strategies to improve food production and new opportunities for communities and decision makers to access technical skills and knowledge to respond to climate change impacts.

Food security was also one of the principal issues highlighted by all four States in the FSM Statewide Assessment and Resource Strategy 2010-2015+¹³¹. The proposed project activities also support the objectives outlined by the four Joint State Action Plans on Disaster Risk Management and Climate Change Adaptation including principally:

- **Chuuk**¹³² - Objective 2.4 "sustain productive agriculture",
- **Pohnpei**¹³³ - Objective 2.3 "school children educated on food security; Objective 4.1 "strengthen food security in Pohnpei", Objective 8.6 "strengthen early warning systems"

¹²⁶ FSM Strategic Development Plan 2004 – 2023; Available at: http://prdrse4all.spc.int/system/files/fsm_sdp_vol_1_0.pdf

¹²⁷ FSM National Agriculture Policy (2011); Available at:

http://www.fao.org/fileadmin/user_upload/sap/docs/FSM%20Agriculture%20Policy%20DraftSR2Sept2011.pdf

¹²⁸ The FSM National government is working on updating the Agriculture Policy and this project will support/complement that process

¹²⁹ Federated States of Micronesia Second National Communication on Climate Change; Available at:

<https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communication-to-the-UNFCCC.pdf>

¹³⁰ FSM Nationwide Climate Change Policy; http://www.fsmpio.fm/Nationwide_Climate_Change_policy.pdf

¹³¹ FSM State-Wide Assessment and Resource Strategy 2011-2015; [https://fsm-](https://fsm-data.sprep.org/system/files/FSM%20SWARS%20FINAL%20REPORT%202010-2015%2B.pdf)

[data.sprep.org/system/files/FSM%20SWARS%20FINAL%20REPORT%202010-2015%2B.pdf](https://fsm-data.sprep.org/system/files/FSM%20SWARS%20FINAL%20REPORT%202010-2015%2B.pdf)

¹³² FSM Chuuk Joint State Action Plan for Disaster Risk Management and Climate Change; <http://bsrp.gsd.spc.int/wp-content/uploads/2019/01/chuuk-action-plan-for-web.pdf>

¹³³ FSM Pohnpei Joint State Action Plan for Disaster Risk Management and Climate Change; http://bsrp.gsd.spc.int/wp-content/uploads/2017/08/JSAP-report_web-1.pdf

- **Yap**¹³⁴ - Objective 2.2: Develop and implement an ongoing climate change and DRM education and awareness program for communities; Objective 3.5: Address food security issues in Yap and the risks provided by climate change and other events
- **Kosrae**¹³⁵ – Activity 1.3.4 “Conduct an awareness program on the nutrition value of locally grown food”; Activity 3.2.11 “Establish and strengthen local early warning systems”; “Objective 5.2: Improve and strengthen cultural and traditional practices and knowledge in agriculture”

In addition to these national and State level plans, the project also aligns with regional frameworks including “Regional Framework for Accelerating Action on Food Security and Nutrition in Pacific SIDS”¹³⁶¹³⁷, “Towards a Food Secure Pacific: Framework for Action on Food Security in the Pacific 2011-2015”¹³⁸¹³⁹, the SAMOA Pathway¹⁴⁰¹⁴¹ and the FAO Pacific Multi-Country Programming Framework 2013-2017.¹⁴²¹⁴³ These frameworks are intended as a regional and national policy guide, and seek to guide countries in determining relevant, specific country-level activities.

Alongside the outcome/activity alignment as described above, the project has worked systematically to ensure country ownership by collaborating from the start alongside the Department of Finance and Administration which is the National Designated Authority for FSM. Several consultations have been conducted including specific discussions with [technical staff] on the composition and structure of project activities. The no-objection letter has been secured from the NDA can be seen in Annex 1.

MCT is uniquely positioned to be the lead organization to implement this project. MCT was founded in 2002 to support biodiversity conservation and related sustainable development for the people of Micronesia in the FSM, ROP, RMI, the US Territory of Guam, and the Commonwealth of the Northern Mariana Islands. MCT supports conservation across Micronesia by providing long-term, sustained funding through grant programs (~\$US 1.4 million per year in local grants), building the capacity of Micronesians and Micronesian organizations to design and manage conservation work. MCT is an active participant in regional forums that bring governments, private enterprises, and communities and non-profit organizations together to collectively address the challenges of natural resource management in Micronesia. MCT’s approach to partnering combines its ready access to international donor assistance and high-level technical assistance organizations as well as to local organization partners that routinely work on natural resource management at the community level. This allows MCT to effectively work with natural resource managers and community members across the region to increase their adaptive capacity to cope with climate impacts at the site-level, while building resilience of ecosystems that provide critical ecosystem services such as food, income, health and safety. Lessons learned from MCT’s supported programs are shared with leaders to support sound decision making at all levels, including community, municipal, State, national, and regional.

¹³⁴ FSM Yap Joint State Action Plan for Disaster Risk Management and Climate Change; http://bsrp.gsd.spc.int/wp-content/uploads/Publications/FSM_Yap_JSAP.pdf

¹³⁵ FSM Kosrae Joint State Action Plan for Disaster Risk Management and Climate Change; Available at: http://bsrp.gsd.spc.int/wp-content/uploads/Publications/Kosrae_JSAP.pdf

¹³⁶ **Pacific Framework Objectives** – 1. Enabling environments for food security and nutrition; 2. Sustainable, resilient, and nutrition sensitive food systems; 3. Empowered people and communities

¹³⁷ Regional Framework for Accelerating Action of Food Security and Nutrition in Pacific SIDS; Available at: <https://sustainabledevelopment.un.org/content/documents/17753PacificFramework.pdf>

¹³⁸ **Towards a Food Secure Pacific Expected outcomes** – 1) multisectoral coordination for food security nationally and regionally; 3) Improved production, processing and trading of safe and nutritious local food; 4) Increased well-being, reduced illnesses, disabilities and premature deaths associated with food insecurity; 5) Individuals, communities, producers and governments empowered with information about food security and the skills to make informed decisions and healthy choices

¹³⁹ Towards a Food Secure Pacific: Framework for action on food security in the Pacific; Available at: http://lrd.spc.int/pubs/doc_download/1055-towards-a-food-secure-pacific-2011-2015-

¹⁴⁰ <http://www.sids2014.org/index.php?menu=1537>

¹⁴¹ **SAMOA Pathway Priority Areas** – 2) Climate Change; 4) Disaster Risk Reduction; 6) Food Security and Nutrition; 9) Sustainable Consumption and Production; 11) Health and Noncommunicable Diseases; 14) Biodiversity

¹⁴² **FAO Framework Priority Areas** – 1) Evidence-based Policy and Strategic Planning 2) Food and Nutrition Security Resilient to the Impacts of Disasters and Climate Change; 3) Value/Supply Chain Efficiency and Market Linkages; 4) Environmental Management and Resilience

¹⁴³ FAO Pacific Multi-Country CPF Document; Available at: <http://www.fao.org/3/a-az134e.pdf>

As an accredited entity to the AF (projects up to USD 1.0 million) and GCF (projects up to USD 10.0 million), MCT continues to focus on institutional strengthening for local organizations. A recent submission to the Adaptation Fund has been approved for USD 970,000. Component 3 of this project is to build community-level adaptive capacity to climate change with a focus on protected area networks, enforcement training and a small grants scheme to support ecosystem-based actions.

This project is one of 14 selected priority projects under the Green Climate Fund Country Program (CP) for the FSM. The Country Program was prepared under the direction of the NDA for the GCF in consultation with the States of Chuuk, Kosrae, Pohnpei and Yap. The Readiness program team developed the country program using a four-part series workshop over a nine-month period: introductory, validation, confirmation and endorsement. Consultations were undertaken with a whole- of-society approach, including stakeholders from civil society, non-governmental and intergovernmental organizations and the private sector. This process was implemented from late 2016 to mid 2017. As this proposal was developed based on the ambitions of FSM stakeholders from its inception, MCT has continuously consulted to ensure that the proposal meets the needs of said agencies, NGO's, communities, women's groups and other organizations. Through MCT's ongoing engagement across the country, the Executive Director and other program staff have been engaging with identified stakeholders over many years, and therefore were already well aware of the food security and resources management needs of the communities around the FSM and this informed the development of the project concept paper. Moreover, this consultation has included discussions with the highest-level officials in the municipal, States and national governments, including discussions with Governors, legislatures, Secretaries and Directors of relevant Departments.

After the NDA requested MCT take the lead and develop the project proposal for the GCF, MCT met with the NDA and National Government authorities on July 3, 2018 to begin consultations. This was followed by four Statewide consultations in Pohnpei (July 5th), Yap (July 9th), Chuuk (July 12th) and Kosrae (July 16th) with a total of 129 participants across the four meetings. All meetings were jointly held as inception for the MCT Adaptation Fund project and consultation for this GCF Concept. Those in attendance included: National, State and Municipal government authorities representing all areas of governance, NGO's, women's organizations, farmers organizations, resource managers, community members, regional organizations and more.

As part of stakeholder engagement during the formulation of the project concept and this project proposal, the project engaged and collaborated with the following entities:

- Department of Finance and Administration (NDA)
- Micronesia Conservation Trust (AE)
- College of Micronesia (COM-FSM)/Cooperative Research Extension Service (CRE)
- Department of Resources and Development
- Pohnpei Weather Services
- Pohnpei State level Agriculture Services
- Pohnpei State level EPA (Environmental Protection)
- National Department of Resources and Development (NDRD)
- Private Sector/Market Actors
- Pohnpei Farmers' Cooperative
- SPC/Other aid organizations

Building from this, the project will work to engage the following stakeholders to secure buy-in and work to tailor and implement activities and outcomes:

- Women's organizations
- Extension agents
- Existing farmer groups
- Individual farmers/households

The project's multi-stakeholder engagement plan can be seen in full in Annex 12.

E.6. Efficiency and effectiveness		
E.6.1. Estimated cost per t CO ₂ eq, defined as total investment cost / expected lifetime emission reductions (Mitigation and Cross-cutting)	(a) Total project financing	US\$ _____
	(b) Requested GCF amount	US\$ _____
	(c) Expected lifetime emission reductions	_____ tCO ₂ eq
	(d) Estimated cost per tCO₂eq (d = a / c)	US\$ _____ / tCO ₂ eq
	(e) Estimated GCF cost per tCO₂eq removed (e = b / c)	US\$ _____ / tCO ₂ eq
E.6.2. Expected volume of finance to be leveraged by the proposed project/programme and as a result of the Fund's financing, disaggregated by public and private sources (Mitigation and Cross-cutting)	(f) Total finance leveraged	US\$ _____
	(g) Public source finance leveraged	US\$ _____
	(h) Private source finance leveraged	US\$ _____
	(i) Total Leverage ratio (i = f / b)	_____
	(j) Public source leverage ratio (j = g / b)	_____
	(k) Private source leverage ratio (k = h / b)	_____
<p>E.6.3.</p> <p>GCF financing will increase the resilience of FSM's most vulnerable communities to food insecurity in the face of climate change. GCF financing will consequently promote public as well as private investments in climate-resilient agriculture. Economic efficiency in these investments will be achieved by: i) using proven techniques to implement cost-effective, climate-resilient agricultural interventions; ii) building the capacity of local farmers, youth, and government officials to plan and implement climate-smart agricultural practices; and iii) increasing resiliencies through the creation of nation-wide networks.</p> <p>The GCF investments in FSM will lead to several economic benefits. These include public goods such as reduced soil erosion and flood damage, as well as private benefits such as increased yields of crops with higher nutritional value for the population. Project activities will enhance improve market conditions to improve the economic value of corps.</p> <p>The effectiveness of the interventions will be ensured through the use of technologies and practices, by leveraging lessons learned, best practices, and activity inventories of past and ongoing projects in FSM and the broader Pacific SIDS context, the project will ensure that the best available practices and technologies are utilized. For example, the Coconuts for Life program has been shown to be effective at improving livelihoods and food security for local farming households in FSM while also establishing financially viable value chains and business models for agricultural products. The current project leverages the PSG model extensively to help plan for project efficiency and effectiveness particularly with regards to sustainable financing for project outputs. Further, the Island Food Community of Pohnpei has also demonstrated successful scale up and support of agricultural value chains to improve income for local farmers and increase consumption of local food.</p> <p>Further, the envisioned project activities also contribute to an environment of innovation, monitoring/verification over time, and evidence-based selection of technologies and practices namely through output 2 which field tests practices and technologies and packages them for farmer uptake and utilization and the project-wide focus on capacity and awareness building and innovation sharing (i.e. farmer associations and forums in output 1.4 and demonstration gardens in 2.1.4).</p> <p>There is no potential for revenue generation and therefore grants are requested.</p>		

F. ANNEXES

F.1. Mandatory annexes

- Annex 1 NDA No-objection Letter(s) ([Template](#))
- Annex 2a Example project level logframe ([Example](#))
- Annex 2b Example timetable ([Example](#))
- Annex 3 Budget plan that provides breakdown by type of expense ([Template in excel sheet](#))
- Annex 4 Gender assessment and action plan ([Template](#))
- Annex 5 Co-financing commitment letter
- Annex 6 Term sheet and evidence of internal approval
- Annex 7 Risk assessment and management ([Template](#))
- Annex 8 Procurement plan model ([Template](#))
- Annex 9a Legal Due Diligence (regulation, taxation and insurance) ([Template](#))
- Annex 9b Legal Opinion/Certificate of Internal Approvals ([Template](#))

F.2. Other annexes to be submitted when applicable/requested

- Annex 10 Economic and/or financial analysis
(mandatory for private-sector proposals)
- Annex 11 Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
- Annex 12 Environmental and Social Action Plan (ESAP) ([Template](#))
- Annex 13 Pre-Feasibility Study and Climate Baseline
- Annex 14 Theory of Change
- Annex 15 Stakeholder Engagement Plan added to Annex 12 as requested by the GCF Secretariat; Current Annex 15 is Executing Entity Capacity Assessment (15-1 through 15-3)
- Annex 16 Regional Institutional Mapping Assessment Report
- Annex 17 AE Fee Request

** Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents.*

No-objection letter issued by the national designated authority(ies) or focal point(s)



Government of the Federated States of Micronesia
Department of Finance & Administration
PO Box PS158 Palikir, Pohnpei FM 96941

Office of the Secretary

Date: May 20, 2020

To: The Green Climate Fund ("GCF")
Songdo Business District
175 Art center-daero
Yeonsu-gu, Incheon 22004
Republic of Korea

Re: **Funding proposal for the GCF by Micronesia Conservation Trust regarding the "Climate Resilient Food Security for Farming Households across the Federated States of Micronesia – SAP"**

Dear Executive Director Yannick Glemarec,

We refer to the project "Climate Resilient Food Security for Farming Households" project in the Federated States of Micronesia as included in the funding proposal submitted by Micronesia Conservation Trust to us on May 20, 2020.

The undersigned is the duly authorized representative, the Honourable Secretary Eugene Amor, the National Designated Authority for the Federated States of Micronesia.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the project as included in the funding proposal.

By communicating our no-objection, it is implied that:

- (a) The government of the Federated States of Micronesia has no-objection to the project as included in the funding proposal;
- (b) The project as included in the funding proposal is in conformity with FSM's national priorities, strategies and plans;
- (c) In accordance with the GCF's environmental and social safeguards, the project as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the project as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all projects or activities to be implemented within the scope of the programme.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

A handwritten signature in black ink, appearing to be "Eugene Amor", is written over a horizontal line.

Eugene Amor

Secretary/National Designated Authority
Federated States of Micronesia

Secretariat's assessment of SAP020

Proposal name:	Climate resilient food security for farming households across the Federated States of Micronesia (FSM)
Accredited entity:	Micronesia Conservation Trust
Country/(ies):	Federated States of Micronesia
Project/programme size:	Micro

I. Overall assessment of the Secretariat

1. The funding proposal is presented to the Board for consideration with the following remarks:

Strengths	Points of caution
The project organizes a system-wide intervention targeting climate information, climate-smart agriculture and livelihood practices, and agricultural market development across Federated States of Micronesia (FSM), upscaling past pilot programmes and applying best practices and lessons learnt.	The project involves significant efforts to stimulate behaviour change via awareness raising, training and capacity-building activities. Robust reporting and evaluation of impact of activities at the community level will be key.
The project is implemented at a national scale and reaches 63% of households in FSM (including women-headed households) to stimulate longer-term changes in production, consumption, and distribution of local produce in four main islands, with coverage of outlying islands in phases.	Climate impact on crop productivity is presented using third party data and analysis. The accredited entity (AE) has stated that crop yield data and modelling are unavailable in FSM but is included as an activity in the project.
Project responds to key GCF priorities of supporting climate change adaptation in a small island developing state (SIDS) via strong national ownership and a Direct Access Entity (DAE) partner engaging a wide cross section of stakeholders at the public and private levels.	

2. The Federated States of Micronesia (FSM) is one of the most highly vulnerable small island developing states (SIDS) in the Pacific region. Projected impacts from climate change over the next few decades include rising sea levels, increased temperature, increased rainfall, increased tidal surges, ocean acidification, as well as increased severity of extreme events like tidal surges, rainfall and storm events, and extreme heat. Such climate hazards severely threaten food security of FSM communities mostly through crop loss, loss of arable land, price/supply shocks, and forced migration of outlying communities.

3. FSM projections for future climate change include an increase in annual mean temperatures and extreme maximum daily temperatures, an increase in average rainfall,

accelerated sea level rise, accelerated ocean acidification, and potentially increased severity of El Niño-Southern Oscillation (ENSO) events. Projections of climate change impacts in a medium emissions scenario for FSM include mean sea level rise (+9 cm by 2030 and +39 cm by 2050); surface air temperature increase (0.8°C (+/- 0.5) by 2030 and 1.5°C (+/-0.6) by 2055); total rainfall increase (2% (+/- 9%) by 2030 and 7% (+/- 14%) by 2055); sea surface temperature increase (0.7°C (+/- 0.5) by 2030 and 1.3°C (+/- 0.5) by 2055); ocean acidification 3.3 (+/- 0.2) by 2030 and 3.0 (+/- 0.2) by 2055. ENSO variations also significantly impact the mean sea level across FSM which impacts tidal surges, rainfall, and extreme events like typhoons.

4. The projected increase in the frequency and intensity of extreme weather events due to climate change poses the risk to crop production over the next few decades. Saltwater intrusion from coastal erosion, sea level rise, and extreme events are the critical climate risks for food security and agricultural production in FSM. Almost all outer island islets lie within the 2-metre zone of potential sea level rise, and all lie within a 5-metre zone of storm surge. Aside from direct crop damage from inundation and erosion, increasing soil salinity is the greatest threat to crop productivity on the atolls of FSM. In addition to the risks outlined above, sea level rise and intensifying rainfall and storm events from climate change also exacerbate existing risks from tidal surges in FSM. Extreme tides, known as “king tides”, cause significant flooding, salinization, and erosion that ultimately damage groundwater resources, taro beds, soil, and agroforestry resources in coastal settings, especially in the low islands.

5. Climate change is expected to dramatically impact food security in FSM, primarily through disrupting local food availability and production. Food security assessments and the agricultural policy state specific adaptation plans, and studies have highlighted four high-level risks of climate change on food security in FSM:

- (a) *Availability*: loss of arable land from inundation and coastal erosion; crop damage and arable land loss from saltwater intrusion and salinization of soils; loss of groundwater; destruction of crops and arable land from tidal surges and extreme weather; changes to growing seasons and viability of certain crops; and increase in crop blight and pests;
- (b) *Access*: lower yield leading to high food prices, particularly for locally grown agricultural products, and lower farmer income; and increased reliance on imports and other negative coping strategies;
- (c) *Utilization*: decreased calorie availability and intake due to loss of subsistence crops; dietary changes and nutritional deficiencies from increased reliance on imported food and loss of subsistence crops; and potential changes in pests and water availability; and
- (d) *Stability*: extreme events, particularly tidal surges and potentially typhoons and droughts from ENSO conditions, can disrupt food storage, access, and availability; abandonment of low-lying islands; and sudden added strain on remaining food systems.

6. The proposed project would be the first comprehensive national effort to focus on increasing the resilience of FSM’s most vulnerable communities to food insecurity in the face of climate change.

7. The proposal seeks GCF grant financing in the amount of USD 8.59 million for a total project cost of USD 9.39 million in grants for activities undertaken in FSM. It will target approximately 68,250 direct beneficiaries in the FSM, where 63 per cent of households are reported to be engaged in agriculture and forestry activities. The project has three interrelated components with specific outputs and activities as described below.

Component 1: Establishing an enabling environment for adaptive action and investment (Total cost: USD 1.86 million; GCF cost USD 1.43 million in grants and co-financing USD 435,000 in grants):

8. Outputs will specifically help to better target adaptation investments based on community-level vulnerabilities, improve technical capacity for climate-smart planning and policy, cement political commitment and accountability for climate-smart agriculture, and drive informed decision-making for farmers, all of which will increase the adaptive and anticipatory capacity of FSM and lay the foundation for improved strategic planning for food security and climate resiliency.

- (a) Output 1.1: Institutional coordination mechanism established;
- (b) Output 1.2: Targeted climate change assessments conducted;
- (c) Output 1.3: Climate change integrated into national and state policymaking and planning, particularly in the agriculture sector;
- (d) Output 1.4: Develop network of farmer associations across FSM; and
- (e) Output 1.5: Develop and disseminate tailored communications materials leveraging existing climate information streams to support climate-smart agricultural interventions.

Component 2: Enhancing the food security of vulnerable households by introducing climate-smart agriculture practices (Total cost: USD 5.94 million; GCF cost USD 5.7 million in grants and co-financing USD 245,000 in grants):

9. Outputs will increase availability, stability, and accessibility of locally grown food for food security, improve nutritional outcomes for vulnerable households, develop new opportunities for income and household productivity, and drive a national change in awareness and utilization of climate-smart agriculture for improved resiliency.

- (a) Output 2.1: Promote and establish traditional and climate resilient agroforestry systems appropriate for different island systems and customized to the climate conditions being faced (linked to findings from Outcome 1 and the Climate Adaptive Agriculture Resilience (CAAR) project);
- (b) Output 2.2: Build the capacity of FSM households and support channels to utilize climate adaptive farming techniques and effective household nutrition, including women-headed households; and
- (c) Output 2.3: Development of reserve capacity for overcoming periods of climate disruption.

Component 3: Strengthening climate-resilient value chains and market linkages across the agriculture sector (Total cost: USD 1.06 million; GCF cost USD 985,000 in grants and co-financing USD 80,000 in grants)

10. Outputs will strengthen climate resilient value chains across the agriculture sector, improve food security gaps through storage and processing, significantly transform opportunities for improved livelihoods thereby driving increased adaptive capacity, and create a strong incentive framework for local farmers to leverage climate-smart agriculture packages beyond the life of the project to secure a long-term shift towards improved climate resiliency with regard to food security.

- (a) Output 3.1: Support for the development of new markets and opportunities to increase the availability and affordability of local food;
- (b) Output 3.2: Enhanced food processing and preservation; and
- (c) Output 3.3: Increased consumption of local produce and awareness of benefits of local food.

11. The Board may wish to consider approving this funding proposal with the terms and conditions listed in the respective term sheet and addendum XVII, titled “List of proposed conditions and recommendations”.

II. Assessment of performance against investment criteria

2.1 Impact potential

Scale: N/A

12. The project will focus on strengthening the adaptive capacity of the communities and households to the above noted climate change risks in FSM through improving food security for household farmers, deploying new climate adapted practices and varieties, creating value chains and linkages for market access for local produce, preventing acute and sustained loss of crops and arable land, and providing for improved income availability and stability.

13. The project will directly improve the adaptive capacity of an estimated 68,250 individuals. In addition to the adaptive capacity benefits, the project will also improve anticipatory and absorptive capacity for communities and households by: 1) providing descaled vulnerability assessments to advise agricultural and other decision-making; 2) developing new climate resilient agricultural packages for communities and households; 3) improving national capacity and strategic consideration of climate change in agricultural policymaking; and 4) increasing savings, efficiency, and net income through production and marketing support, associations, and improved support and adviser networks.

14. The project aims to target all farmer households focusing on households that utilize agriculture as the main source of subsistence, income, and livelihood, based on past surveys and census information. The project will focus on the high island value chains in the four FSM states. The project will leverage existing studies and the results from the integrated vulnerability assessments as well as crop yield models produced through data collected as part of Outcome 1 when selecting project areas that have agricultural potential for specific crops and climate-smart agriculture practices. Other considerations will include adaptive capability to climate change, and other strategic considerations, such as distance/access to markets, proximity to schools, availability of existing business models, among others.

2.2 Paradigm shift potential

Scale: N/A

15. FSM’s economy, particularly the agriculture sector, is acutely vulnerable to the impacts of climate change, such as loss of arable land, crop loss, and overall food insecurity stemming from saltwater intrusion from sea level rise and tidal surges, extreme rainfall and flooding, extreme heat, loss of agroforestry resources, and increased intensity of extreme events. The government of FSM lacks both capacity and financial resources to effectively address both the growing issue of food security (access, availability, stability, and utilization) as well as the impending impacts of climate change. Previous one-off projects have not achieved any lasting impact at the national level. Finally, among the vulnerabilities exposed by the recent COVID-19 pandemic, is the need for stronger domestic food supplies to build the resilience of FSM against future infectious disease outbreaks.

16. The project’s paradigm shift lies in its ability to have an integrated and multi-pronged approach to addressing issues at the nexus of climate change, food security and livelihood development at the household and community level across the FSM. It specifically responds to lessons learnt on the weaknesses of fragmented and piecemeal efforts in earlier programmes in FSM and presents a package of interventions undertaken at a larger scale. By also designing activities that fill gaps and weaknesses identified in evaluations of past programmes, the project

avoids issues that may limit its effectiveness through the adoption of activities that are poorly suited to the FSM context.

17. Various aspects of the programme will have a transformative impact on the agricultural value-chain in FSM, in production, distribution and consumption of locally grown food. The interventions planned in this project will support adaptation and productivity targeted toward unique farmer groups to introduce improved climate resilient varieties, innovative adaptation practices and technologies, diversification, and explore business models to ensure these practices are financially viable in the long-term. A particular strength of the programme is the creation of food production opportunities, using Participatory Guarantee Schemes and leveraging the experience in FSM of the Coconuts for Life programme (C4L) that enables small-scale producers and households to increase incomes and have a transparent and reliable system for valorising produce. Moreover, the programme seeks to create food markets, alternative income schemes (e.g. poultry farms, seed banks, associations) that are intended to remain self-sustaining and stimulate longer-term changes to incentives and the food supply market dynamics in FSM.

18. The project will also work to improve technical capacity and coordination for climate-smart agriculture planning and policy, support improved decision-making for agriculture through downscaled climate information, increase availability, stability and accessibility of locally grown food for food security, and improve nutritional outcomes for vulnerable households.

2.3 Sustainable development potential

Scale: N/A

19. Environmental co-benefits: by preserving arable land and promoting and providing training for agroforestry practices the project can help avoid deforestation and land clearing for agriculture. Promoting climate-smart agriculture also supports soil/water conservation and improvements to the soil and water quality for FSM ecosystems and communities. The project also supports expanded capacity for food processing and storage which can reduce food and environmental waste. Sustaining the forest ecosystem can also support biodiversity conservation which plays a key role in tourism for FSM. There are also nominal greenhouse gas (GHG) reductions from the reforestation efforts.

20. Socioeconomic co-benefits: in focusing on expanding local agriculture production, creating new market opportunities, and promoting local food options for households, the project will directly improve both income and nutritional outcomes for households by providing nutritious and cost-effective alternatives to imported food. In addition to decreased expenditures on imports, the market linkages envisioned by this project also create new opportunities for income generation for households. Improved diets will also reduce healthcare expenditures for non-communicable diseases (NCDs) over time. New jobs will be supported throughout the agricultural value chains.

21. Gender co-benefits: the project will focus specifically on gender-sensitive training to women and women-headed households, particularly in food processing training. The project will also target high rates of participation of women in committees, associations and in decision making. In FSM 20 per cent of households are headed by women. These households are typically poorer with greater reliance on subsistence farming. There is also a high incidence of violence against women in FSM which may be reduced through the positive gender impact of the project and its activities.

22. The project supports progress in FGM on key Sustainable Development Goals (SDGs), namely: SDG 1 – Poverty alleviation through new income opportunities and reduction of household expenditures on imported food; SDG 2 – Greater food security for households; SDG 3 – Reduction in NCDs through greater availability and utilization of nutritious produce; SDG 5 –

Targeted opportunities for female-led households and women's groups promoting the advancement of women and gender-sensitive development impacts; SDG 8 – Job creation and improvement for local household farmers through facilitation of market access and expanded opportunities for market participation; SDG 13 – Climate resiliency and adaptation for communities are at the core of the project; and SDG 15 – Conservation and integration of agroforestry techniques will help to avoid land and soil loss and conserve native ecosystems.

2.4 Needs of the recipient

Scale: N/A

23. FSM is a small island developing State, and therefore faces challenges such as a limited resource base that is characterized by its incompatibility with economies of scale and sustained economic growth; small domestic markets with heavy dependence on a few external and remote markets; high cost of energy, infrastructure and transportation; constrained private sector development; limited productive use of land; limited institutional and technical capacity; high rates of gender-based violence and inequality; widely dispersed geography; low resilience to natural disasters; and a fragile natural environment. Taken as a whole, these challenges make the FSM highly vulnerable to external shocks and heavily dependent on overseas aid, thus forming a formidable barrier to sustainable development.

24. FSM state and national financial capacity is constrained, particularly when considering the magnitude of the threats of food insecurity and climate change. FSM's national budget currently includes ~USD 500,000 per year for food security projects, but that amount is both decreasing and insufficient to address the food security and agriculture needs. Outside funding has been leveraged in this space, but the funding amount is inadequate to meet adaptation needs and more than 60 per cent of the funds are "uncoordinated" by national decision makers which further creates a void for effective and coordinated financing for climate adaptation and food security in FSM.

25. Despite strong political will, the Government of FSM does not have resources to meet the challenges caused by climate change. FSM is an under-resourced country that is highly dependent on the US Compact of Free Association (COFA) funding. The COFA funds 80 per cent of state budgets. The current phase of COFA support is due to expire in 2023, and if not renewed, funding towards climate adaptation measures will be severely curtailed. GCF funding is therefore needed to ensure that the Government of FSM has sufficient resources to continue to invest in climate resilience.

2.5 Country ownership

Scale: N/A

26. This project aligns with and supports the priorities and strategies of national planning and frameworks in FSM and has embedded country ownership into the scope of the project.

27. Agriculture is one of the priority economic sectors identified under the FSM Strategic Development Plan (SDP) 2004–2023. The project aligns with the SDP agricultural goals 1 to 4 (properly focused agriculture policy framework; increased production of traditional farming systems; increased volumes of saleable products in markets; and environmentally sound and sustainable production) as well as the SDP environmental goals 1 and 6 (mainstream environmental conditions, including climate change, into policy and planning; improve environmental awareness, education, and involvement of citizenry). Achieving national food security, safety and nutritional health is also one of the priority goals outlined in the FSM National Agriculture Policy (2012–2016). The project supports the goals and strategies of the policy for mainstreaming climate change and resilience into the agriculture sector, increasing production of traditional farming systems to provide for household nutrition and incomes, and to increase the volume of saleable agricultural products.

28. In addition to various plans at the regional and state levels, the project also aligns with regional frameworks including “Regional Framework for Accelerating Action on Food Security and Nutrition in Pacific SIDS”, “Towards a Food Secure Pacific: Framework for Action on Food Security in the Pacific 2011–2015, the SAMOA Pathway and the Food and Agriculture Organization (FAO) Pacific Multi-Country Programming Framework 2013–2017.
29. Accredited entity (AE): the Micronesia Conservation Trust (MCT) is the AE designated by the FSM and will be responsible for supervising the implementation, financial management, evaluation, reporting and closure of the project, as well as having overall fiduciary responsibility, such as procurement of foods and services. MCT is a regional Direct Access Entity (DAE), created in 2002, MCT supports biodiversity conservation and related sustainable development in FSM by providing long-term, sustained funding through a grants programme. MCT is a private corporation with a governing board of 11 members, including members from international, regional, national, state and municipal governments, NGOs, business, financial and academic institutions. MCT mobilizes funding from a variety of public and private sources to provide long-term support for sustainable biodiversity resource management in FSM. In addition to providing financial support, MCT builds the capacity of Micronesian organizations to design and manage programmes. MCT also provides a forum to bring together government, private enterprise, and community and non-profit organizations.
30. Executing entities: FSM, acting through the Department of Resources and Development (R&D) and Department of Environment, Climate Change and Emergency Management (DECEM), as well as the College of Micronesia (COM-FSM) will serve as the executing entities (EEs).
31. FSM’s R&D is the lead government entity for the agriculture sector. DECEM serves as the lead government agency on issues related to emergency, environment and sustainable development, and climate change. DECEM is responsible for disseminating information related to early warning information to mitigate damage from disasters.
32. The College of Micronesia-FSM (COM-FSM) is a multi-campus institution with the National Campus located in Pohnpei, and a State Campus in each state. COM-FSM runs the Small Island Agricultural programme which addresses sustainable plant and animal production and marketing including potential adverse effects on the environment and ecosystems due to improper practices. It is the main institution on FSM with experience in training farmers across the four states and leading research on food security within the local context.

2.6 Efficiency and effectiveness

Scale: N/A

33. The simplified approval process (SAP) project seeks USD 8,583,950 out of a total project cost of USD 9,393,950 as non-reimbursable grant from the GCF. The remainder of financing is provided via in-kind support from MCT, DECEM, R&D and COM-FSM as co-financing. The financing ratio is 1:0.01.
34. The project beneficiaries are both the public and private sector, given that households and private individuals are considered private sector actors. While some revenue generation arises from fees to farmer associations, sale of seeds in nurseries, and sale of agricultural produce by farmers themselves, the scale of financial returns is small and not amenable to cost recovery via non-grant instruments. The project may create economic multiplier effects through development of markets and market linkages. The development of nurseries and seed banks ensures longevity of project impact by creating a self-sustaining supply of climate resilient seed varieties that can be distributed to communities and households both proactively and post-disaster.
35. The project does not risk displacing the private sector. On the other hand, it will establish Participatory Guarantee Schemes, farmers associations and agricultural networks. These institutions will provide a forum for adaptive management and long-term knowledge and

innovation sharing across States as well as a vehicle for directly reaching communities and households and upscaling market value chains. The AE has indicated that there are no lenders or micro-finance providers able to serve the project beneficiaries and therefore the grant serves a funding gap that is not otherwise met. However, the project will create an enabling environment for establishing such actors by developing new awareness and opportunities for market participation for household farmers, and creating new structures.

36. GCF involvement will allow FSM to establish a ‘whole system’ methodology using the four pillars (availability, accessibility, utilization and stability), highlighting in particular the relationship between the urban, rural and neighbouring island communities in FSM and developing an integrated approach that combines social vulnerability (including traditional and gender approaches) and technical climate change impact analysis.

III. Assessment of consistency with GCF safeguards and policies

3.1 Environmental and social safeguards

Does the project comply with the GCF Environmental and Social Policy?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Does the project have minimal to no environmental and social safeguards (ESS) risks compatible with SAP?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

37. The project has the potential to preserve arable land through the implementation of practices such as sustainable agroforestry whilst contributing towards improved food security. By promoting local agriculture production, expanding the capacity for food processing and storage, creating new market opportunities, and promoting local food options for households, the project will directly improve both income generation for farming households, and nutritional and health outcomes for households by providing cost-effective alternatives to imported food. The Secretariat confirms the project’s category C classification and that it is eligible under the simplified approval process (SAP) facility. The funding proposal is within the AE’s environmental and social risk category accreditation level of category C.

38. The majority of environmental and social impacts have been assessed to be negligible in terms of risk significance in the environmental and social action plan. Minimal impacts may arise from clearing of vegetation and water usage due the project’s agricultural activities, particularly for agroforestry practices. Activities will not involve new acquisition of land as the project will target households that are already involved in small-scale farming and utilise existing facilities for storage and market activities thereby avoiding the construction of new facilities.

39. To mitigate the minimal risks and impacts identified, the project incorporates organic farming training and awareness building into its climate-smart agriculture packages which will work to reduce fertilizer usage by smallholder farmers, and water resource management strategies, particularly for agro-forestry activities. The AE will be responsible for the implementation of mitigation measures.

40. The AE submitted a stakeholder engagement plan that outlines consultations that were undertaken during the project’s preparation phase with national and local authorities, civil society organizations and farmers’ cooperatives. The plan provides information on intended stakeholder engagement going forward during implementation, including timing, type of engagement meetings and aspects of the project that will be put to consultation.

41. The environmental and social action plan outlines the AE’s institutional-level grievance mechanism that will be employed to resolve concerns about the project brought to the attention

of the AE, including how the mechanism can be accessed. Additionally, the GCF independent redress mechanism will be available to affected or potentially affected people and communities and is also included in the environmental and social action plan.

3.2 Gender policy

Does the project comply with the GCF Gender Policy?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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42. The gender assessment provided illustrates the existence of an enabling environment that is conducive to the pursuit of gender equality and women’s empowerment in FSM. The FSM has ratified a range of international conventions including, amongst others, the Convention on the Elimination of all Forms of Discrimination against Women (CEDAW). The Constitution states that no law shall be enacted in the Trust Territory which discriminates against any person on the basis of race, sex, language, or religion, nor shall the equal protection of the laws be denied. The Strategic Development Plan (SDP) highlights seven specific goals aimed at improving gender equity and social inclusion while the National Gender Policy (NGP) 2018–2023, aspires to promote gender equity, equality, social justice and sustainable development in the country. The Gender Development Office is a lead institution and is responsible for gender issues in the country. In the agriculture sector, one of the seven guiding principles of food security and agriculture planning and implementation is “social and gender equity” with one goal of “Improving farm incomes and livelihoods with particular focus on gender and vulnerable groups.”

43. The gender assessment was done based on a desk review and stakeholder consultation at various levels including women, youth and other vulnerable groups. It indicates that despite the existence of the enabling environment, there continue to be significant barriers faced by women. Social and cultural barriers that consider women’s primary role to be homemakers and caregivers to children, the elderly and people with special needs, create a lack of alternative livelihoods for women beyond home-based agriculture. This is compounded by barriers to accessing agricultural land, training, credit and social and financial services. Gender-blind design of options and policies for climate adaptation and agriculture continue to disadvantage women due to the exclusion of women from decision-making and governance at a number of levels. Around 30 per cent of households live below the basic poverty line, and households that are headed by women are more likely to live in poverty and earn less than male-headed households. Women have fewer income earning opportunities than men due to hiring preferences in the formal sector, and the difficulties women face in establishing and sustaining micro and small business ventures. Overall, the number of women who earn wages or have salaries in FSM is less than half that of men, and men have higher rates of employment in all fields, including agroforestry. Economic activities in FSM consist primarily of subsistence farming and fishing, and in these sectors almost 50 per cent of men in the labour force are considered skilled, compared to less than 20 per cent of women. Women in FSM are absent from the legislative and executive levels of government, and continue to be significantly under-represented in civic affairs. It is also of concern that there is a high prevalence of gender-based violence (GBV) and the vast majority of women who experience abuse do not refer to formal support services or authorities. Access to these services is also difficult.

44. Almost all FSM households grow crops for consumption, barter, and sale. Women play a critical role in food production through subsistence farming to feed their families, as well as growing cash crops for income. There are differences between the kinds of crops traditionally grown by women versus men, as well as differences in the locations where women and men farm. Men tend to work on higher ground. This is significant given that the impacts of climate change (i.e. saltwater inundation, flooding and coastal erosion, soil fertility, vegetables, etc.) are most pronounced in areas planted close to houses, near streams and coastlines. The assessment

has demonstrated the differentiated gender relation, roles and responsibilities in FMC and particularly as these relate to farming households. The assessment has been able to identify the barriers to equal access and benefits of GCF intended investment. On the other hand, the assessment has also identified existing potential to further support the promotion of gender equality and women's empowerment. This will be done through the identification, assessment and planned engagement of women's groups and their existing capacity in the four main territories to support the project in mainstreaming gender, engagement with the Women Development Office and leveraging the support of UNWOMEN to address GBV issues.

45. The AE has provided a gender action plan (GAP) and therefore complies with the requirement of the gender policy of GCF. The GAP provides activities that address the challenges faced by women and includes baseline (0), indicators, targets (30%), timelines and budgets. Activities included are aimed at increasing women's leadership and decision-making in the agriculture sector; increasing economic opportunities and monitoring increases in income; strengthening women's representation in institutional decision-making and coordination; development of gender-responsive and inclusive agriculture and climate change policy; and ensure gender-responsive and gender-balanced capacity-building and training. It includes measures to enhance the food security of vulnerable households (with a focus on female-headed households) by leveraging men and women farmers' knowledge of inputs and production systems to better develop climate-smart agriculture practices and use of seeds, while ensuring men and women have equal access to project benefits and participate in decision-making. The GAP also includes measures to strengthen climate resilient value chains and market linkages across the agriculture sector and ensure market development takes into account differentiated access and availability for men and women farmers, particularly with regard to social barriers to access. Activities are designed to empower women, particularly through women's groups, to promote consumption of local food and ensure that food processing and preservation techniques are reflective of the time, capacity and technological constraints of household farmers, particularly women. Since GBV has been identified as a critical challenge, the partnership with UN Women and utilization of already existing tools available from them will contribute to a better understanding of violence against women and equip personnel working on the project with ways to reduce GBV. The project has developed measures to ensure that women have equal access to the grievance mechanism which will provide all female beneficiaries with a clear process for providing comment and raising grievances, and will ensure women can report grievances anonymously through the establishment of focal points for the project within the four State-level umbrella women's groups.

46. In general, the GAP includes measures designed to transform gender norms, reduce gender gaps and support progress towards more gender equality. The AE is encouraged to ensure sufficient budget is allocated to achieve gendered objectives and, where GAP activities are folded into the overall budget ('no additional cost'), to estimate the proportion of these costs that are allocated for women, and include it in the GAP budget. Women's access to land is an issue that is identified in the gender analysis and the AE is recommended to explore potential opportunities to address the issue of access to land and land tenure and incorporate it into the action plan as appropriate and as soon as possible.

3.3 Risks

3.3.1. Overall proposal assessment (medium risk):

47. The GCF is requested to provide a grant of USD9.4 million to increase the resilience of Federated States of Micronesia (FSM) vulnerable communities to food insecurity in the face of climate change in the FSM. The Micronesia Conservation Trust (MCT) will be the Accredited Entity (AE) and the project will be executed by the government of FSM and The College of Micronesia. The proposal will target all households in the FSM islands undertaking some form of

farming. In-kind co-financing will be provided by MCT (USD 0.26million), Department of Climate Change and Emergency management (USD 0.25 million), Department of Resources and Development (USD 0.20 million) and College of Micronesia-FSM (USD 0.1 million).

3.3.2. Accredited entity/executing entity capability to execute the current project (medium risk):

48. The Micronesia Conservation Trust (MCT) will be the Accredited Entity (AE). MCT has been created in 2002 and supports biodiversity conservation and related sustainable development for the people of Micronesia. The MCT is a private corporation with a governing board of 11 members, including members from international, regional national, state, and municipal governments, NGOs, business, financial and academic institutions. MCT will enter into agreements (Project Cooperation Agreement or Memorandum of Understanding) with R&D, DECEM and COM-FSM, as the EEs, for the execution of the project.

49. The FSM national government will act as EE through the Department of Resources and Development (R&D) and the Department of Environment, Climate Change & Emergency (DECEM). Based on the due diligence assessment conducted by the AE of R&D and DECEM in 2018 and 2020, MCT determined there are weaknesses in procurement and financial management of the FSM government. As a mitigant to this risk, disbursement of funds will be from the Green Climate Fund to the Micronesia Conservation Trust (MCT), which will be responsible for budgeting, procurement, and expenditure. The project funds will be deposited in a designated account managed by MCT. It is envisaged that expenses will be paid directly by MCT to the project partners. The AE notes that the FSM government has agreed for MCT to procure certain services directly.

50. The College of Micronesia-FSM (COM-FSM) is an institution with its National Campus located in Pohnpei, and a State Campus in each state. COM-FSM has experience training farmers across the four states and leading research on food security. COM-FSM is the legal entity for Components 2 and 3. The college is accredited by the Accrediting Commission for Community and Junior Colleges of the Western Association of Schools and Colleges, an institutional accrediting body recognized by the Commission on Recognition of Postsecondary Accreditation and the U.S. Department of Education.

3.3.3. Project-specific execution risks (high risk):

51. Limited uptake or utilization of climate adaptive farming practices could reduce the impact of the project. Comfort can be derived from community engagement activities as well as project activities with regards to developing value chains, market access and business model development.

52. The adaptation and resiliency outcomes for the project are contingent on creating efficient channels for trading and marketing local produce. Underutilization or delay in formation of such channels will hamper project success. Comfort can be derived from intent to engage individual households and communities (e.g. via survey) to specifically identify and address market barriers.

53. Political risk: FSM is dependent on the US Compact of Free Association (COFA) funding. This funding source will no longer be available leading to an estimated annual financing gap of about USD 41 million. The AE notes that this creates uncertainty at the national and state levels, particularly for budgeting and strategy. Swings in policy, priorities, and budgets could hamper project execution.

54. Economic benefits are expected from reduced soil erosion and flood damage, as well as increased yields of crops with higher nutritional value for the population. Project activities will enhance/improve market conditions to create the economic value of crops. Use of grant is

justified by the needs of the recipients and as there is no potential for revenue generation envisioned.

55. The recipient country, Federated States of Micronesia (FSM), is not subject to United Nations Security Council resolutions.

56. The AE determines that as regards to anti- money laundering (AML), counter-terrorist financing (CTF) and prohibited practices (PPs) the executing entities (EEs), R&D and DECEM, represent medium risk, while COM-FSM is low risk. As the mitigation actions against AML/ CTF and PPs risks, the AE will ensure that GCF funds are not directly channelled into the EEs bank accounts and all procurement activities will be centrally managed by the AE.

57. The Office of Risk Management and Compliance (ORMC)/Compliance Team has conducted a review of the project in accordance with relevant GCF Board approved policies and does not find any material issue or deviation with respect to compliance issues. Based on available information for this funding proposal, the ORMC/Compliance Team have determined a risk rating of 'low' and have no objection to this request proceeding to the next steps for processing.

Summary Risk Assessment		Rationale
Overall project/programme	Medium	The impact of the project will depend on the uptake and utilization of climate adaptive practices and improving market channels. The project is exposed to political risks.
AE/EE capability to implement the project/programme	Medium	
Project specific execution	High	
GCF portfolio concentration	Low	
Compliance	Low	

3.4 Fiduciary

Does the project comply with the GCF AE fee policy?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
In case the EE (ies) is different to the AE, has the financial management capacity assessment of the EE (ies) been undertaken?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

58. The Micronesia Conservation Trust (MCT) will be the accredited entity (AE) designated by the Federated States of Micronesia (FSM). The AE will be responsible for supervising the implementation, financial management, evaluation, reporting and closure of the project, as well as having overall fiduciary and quality assurance responsibility. The project funds will be deposited in a designated account managed by MCT.

59. The FSM national government, acting through the Department of Resources and Development (R&D) and the Department of Environment, Climate Change and Emergency Management (DECEM), and the College of Micronesia (COM-FSM) will serve as the executing entities (EE). The FSM Government and COM-FSM will assume overall responsibility for the effective delivery of required inputs in order to achieve the expected project outputs. MCT will enter into appropriate agreements (Project Cooperation Agreement or Memorandum of Understanding) with R&D, DECEM and COM-FSM, as the EEs, for the execution of the project.

60. R&D, as the lead government entity for the agriculture sector, will oversee Component 1 as well as the day-to-day execution of the project through the establishment of a Project Management Unit (PMU). DECEM is responsible for disseminating information related to early

warning information to mitigate damage from disasters. DECEM will take the lead on output 1.5 and COM-FSM will be responsible for Components 2 and 3.

61. The Government of FSM has undergone a capacity assessment. The report has identified financial management and human resources as weaknesses in the government system. MCT through its own due diligence assessment of both R&D and DECEM undertaken initially in 2018 when first developing the project proposal, confirmed weaknesses in procurement and financial management of the FSM Government. As such, the main recommendation to mitigate these risks is to structure implementation arrangements in such a way as to minimize the risk of any mismanagement and project implementation delays. Specifically, MCT should handle procurement for the government outputs/activities. Additionally, given the risk factors highlighted by the due diligence assessment, no funding will flow to the executing entities or beneficiaries. Therefore, all funds will flow directly to the AE. In 2020, MCT once again assessed whether any changes have been made by the Government of FSM's procurement or financial management system since 2018 and apparently no changes have been made. MCT has concluded therefore that the most effective and efficient implementation process is for MCT to undertake procurement on behalf of the project's EEs.

62. Capacity assessments of COM-FSM have shown that it has the proper capabilities, financial resources, appropriate experience to implement Components 2 and 3 of the project.

63. All financial management and procurement, including financial accounting, disbursement methods and auditing will be specified under the Funded Activity Agreement (FAA) and will be aligned with the process and method agreed in the Accreditation Master Agreement (AMA).

64. An annual project audit will be undertaken as well as a final project audit. The audits will include an audit of MCT's procurement process for the project.

3.5 Results monitoring and reporting

Is the project in line with the GCF Monitoring and Accountability Framework?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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3.5.1 Results monitoring and reporting

65. The theory of change properly articulates the final project goal and identifies the adaptation logic which informs the project's design. Adequate linkages between project results, outcomes and impacts have been provided as well as sufficient articulation of barriers and assumptions.

3.5.2 Logical framework

66. As an adaptation project, the intervention expects to benefit 68,250 direct and 112,640 indirect beneficiaries of which 50 per cent are women. The project will deliver benefits to the entire population of FSM leading to better nutrition and reserve capacity.

67. Overall, the logical framework is assessed to require some further improvements against the GCF risk management framework and performance management framework. For example, some of the provided Means of Verifications for Fund Impact and Outcome level indicators are project generated, and do not have primary sources of verification or secondary sources of data for triangulation of project generated sources. In addition, a few outcome indicators do not fully comply with the guidance provided in Annex IV of the GCF Programming Manual. For example, proposed targets under indicator A6.2 do not show how the uptake of

climate information is expected to be translated into quantifiable economic benefits, while for indicator A7.1, the set baseline is not adequately aligned with proposed targets.

68. The Secretariat proposes that identified deficiencies are resolved to the satisfaction of the Secretariat prior to Board consideration to ensure credibility of results reporting and evaluability of the interventions for the funding proposal/investment and avoid issues/delays in FAA execution and implementation.

3.5.3. Implementation timetable

69. The implementation timetable has been provided in a format that would enable progress assessment during the implementation period. However, the milestones and deliverables need to be included in light of the feedback provided to determine implementation performance in concrete terms.

3.5.4. Monitoring, reporting and evaluation arrangements

70. The Secretariat advises the AE to complete the monitoring and evaluation plan after the logical framework is properly finalized.

3.6 Legal assessment

Has the AE signed the Accreditation Master Agreement (AMA)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <u>Date of AMA execution:</u> 11/13/2017
Has a bilateral agreement on privileges and immunities been signed with the country where the proposed project/programme will be implemented?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Has a certificate of internal approval been submitted?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

71. The Accreditation Master Agreement was signed with the accredited entity on 13 November 2017 (the “AMA”), and it became effective on 22 October 2018.

72. The accredited entity has provided a legal opinion/certificate confirming that it has obtained all internal approvals and it has the capacity and authority to implement the project.

73. The proposed project will be implemented in the Federated States of Micronesia. GCF has signed a bilateral agreement on privileges and immunities with the Federated States of Micronesia.

74. In order to mitigate risk, it is recommended that any approval by the Board is made subject to the following conditions:

- (a) Signature of the funded activity agreement in a form and substance satisfactory to the GCF Secretariat within 180 days from the date of Board approval; and
- (b) Completion of the legal due diligence to the satisfaction of the GCF Secretariat.

Independent Technical Advisory Panel's assessment of SAP020

Proposal name:	Climate resilient food security for farming households across the Federated States of Micronesia (FSM)
Accredited entity:	Micronesia Conservation Trust
Country/(ies):	Federated States of Micronesia
Project/programme size:	Micro

I. Assessment of the independent Technical Advisory Panel

1.1 Impact potential

Scale: N/A

1. This adaptation funding proposal is submitted by the direct access entity (DAE) Micronesia Conservation Trust (MCT)¹ designated by the Federated States of Micronesia (FSM), which is a small island developing State (SIDS). The proposal is submitted under the simplified approval process (SAP) requesting USD 8,583,350 GCF grant. The funding proposal covers two GCF results areas: most vulnerable people and communities (45 per cent of the GCF contribution) and health and well-being, food and water security (55 per cent of the GCF contribution).

2. The Federated States of Micronesia consist of four States: Chuuk, Kosrae, Pohnpei and Yap. The vast geographical spread of the FSM islands from Yap State to Kosrae State sees a wide variation in location and geology from west to east, thus having a wide range of climate and different impacts of climate change across the country. Rapid assessments done during the preparation of the GCF country programme of MSF provide the following descriptions:

- (a) **Yap State** is characterised by gentle slopes and swampy lowlands, unlike the other three States which have rugged highlands. This State is drier than the other States and is highly susceptible to droughts and wildfires. It is also the most susceptible to typhoons; between three and five typhoons hit Yap State each year. During the summer months (June to October), Yap experiences heavy showers or thunderstorms, occasionally accompanied by strong and shifting winds;
- (b) **Chuuk State** is composed of a large archipelago with mountainous islands surrounded by a string of islets on a barrier reef, a large lagoon, and islands that are flat and small located outside the lagoon, referred to as 'outer-islands'. As the most populated State, Chuuk's dispersed geography and demography is unique compared to the other States, all which have the majority of their populace concentrated on large central islands. Storms and typhoons have caused widespread damage in Chuuk, while also bringing heavy rainfall causing extensive flooding, mudslides, and landslides that have resulted in deaths;

¹ The MCT is private corporation supporting biodiversity conservation and related sustainable development for the people of Micronesia, in the Federated States of Micronesia, the Republic of Palau, the Republic of the Marshall Islands, the US territory of Guam and the Commonwealth of the Northern Mariana Islands. See: ourmicronesia.org

- (c) **Pohnpei State** periodically experiences droughts and short, severe tropical storms. The northern part of Pohnpei often experiences tropical disturbances. Kapingamarangi is the State's southernmost atoll and is the most subject to droughts; and
- (d) **Kosrae State** has experienced severe droughts and also frequent severe rainstorms, accompanied by damaging winds, during the rainy season of November through March.
3. FSM's climate varies considerably from year to year due to the cyclical El Niño and La Niña events of the El Niño-Southern Oscillation (ENSO). El Niño causes drier conditions which results in droughts. La Niña causes above-average rainfall and tropical storms. Forecasts up to 2100 show: decrease in the frequency of typhoons and severe storms (medium to low confidence); rise in sea level up to 60 millimetres by 2070 (very high confidence) and increased ocean acidity (very high confidence); decreased frequency of droughts (medium confidence); increase in air and sea temperature up to 3.5°C (high confidence); and increase in extreme temperatures and extreme rain events (high confidence).
4. The funding proposal partially aligns with one of the priority projects of FSM's GCF country programme, in particular, "FSM Food and Water Security Programme". The contribution to strengthening of food security through strengthening subsistence agriculture is one focus area of the proposal but it covers only the agriculture sector and water security is not a part of this project. The funding proposal recognises agriculture as a key component of the country's food security programme. The project aims at strengthening subsistence farmers' food security and resilience to climate change. Food security as the country's priority is also reported in the Second National Communication (SNC) of FSM to the United Nations Framework Convention to the Climate Change (UNFCCC) and in the country's climate change strategy as a priority for FSM's adaptation plan.
5. In 2010, the Government of FSM conducted climate change vulnerability and adaptation needs assessments on 14 atoll islands in the States of Chuuk, Pohnpei and Yap, as part of the preparation of the SNC. This assessment was focused on baseline impact assessments of climate change and non-climate change drivers of food security and the effectiveness of climate change adaptation measures already implemented through various projects. Food security assessments have been conducted applying the Food and Agriculture Organization (FAO) four pillars framework approach. The baseline status of these pillars identified through assessment is as follows:
- (a) **Availability pillar** addresses the "supply side" of food security, assessed through the level of food production, stock levels and net trade. The main findings for this pillar in the baseline situation are: declining food availability due to significant reliance on rain-fed and subsistence agriculture; increasing production of export crops (kava, betel nut and piper leaves), instead of staple crops (taro, breadfruit, cassava, yams, banana, coconut, etc.); increasing reliance on imported food due to high prices for local foods compared to imported foods; loss in knowledge of traditional food systems; decline in agricultural labour force; and reduced soil fertility. Among these listed trends in the food security process, declining soil fertility, mostly due to salinization of soils from inundation and coastal zone erosion, represent the greatest climate change impact. A rise in the soil salinity level decreases crop productivity and limits the types of crops that can be grown. This process is exacerbated due to a lack of farmers, crop markets, well-established connectivity and opportunities for farmers to sell their food in local markets;
- (b) **Access to food pillar** considers incomes, expenditures, markets and prices. The following trends are identified in the access to food: low income of farming households due to decreasing quality and quantity of yields, large household sizes and relatively high expenditure for food, increased unemployment and high prices for local food compared to imported food;

- (c) **Utilization** of food **pillar** considers the ways in which the body gets the most nutrients from food. This depends on food preparation, diversity of diet and intra-household distribution of food. Baseline findings for this pillar are: decrease in caloric availability due to loss of subsistence crops; high prevalence of non-communicable diseases (NCDs) caused by the low nutrition value of food, high prevalence of obesity and vitamin A deficiency, shifting preferences towards imported food, poor controls for ensuring high nutrition imported food; and
- (d) **Stability pillar** that considers reliability of food production and supply system and resilience against increased extreme events. Key weaknesses of FSM's food supply system are: many agricultural areas have not recovered from past extreme events or the expanding impacts of salinization and coastal erosion and are fundamentally not resilient or adapted to potential future disasters; agricultural production storage and distribution institutions are poorly equipped to cope with extreme events, particularly storm surge, high tides, and droughts; and growing reliance on imports also increases the risks of price shocks and food shortages from volatility in global oil/commodity prices and interruptions to supply chains and distribution channels.
6. The funding proposal mainly targets the most vulnerable with regard to the climate change "availability of food" pillar, though it will also contribute to the "access to food" and "food stability" pillars. Activities planned within the funding proposal are for strengthening the adaptive capacities of household farmers in all four States of FSM. Rain-fed, subsistence agriculture is focused on increasing the food security of this particular group of vulnerable and insecure population. The project also contributes to the country's food security system.
7. Three components are considered within the funding proposal:
- (a) **Component 1. Establishing an enabling environment for adaptive action and investment** (USD 1,427,300; 16 per cent of GCF grant).
- This component is based on the food security barrier analysis conducted by previous projects and is dedicated to increasing the country's adaptive capacity to climate change specifically addressing the impact of climate change planning on agriculture and food security policies and strategies, as well as at operational level.
- Key outputs of this component are: institutional coordination mechanism established; targeted climate change impact assessments conducted; climate change integrated into national and state policymaking and planning, particularly in the agriculture sector; network of state-level farmer associations across FSM developed; tailored communications materials leveraging existing climate information streams to support climate resilient agriculture (CRA) interventions developed and disseminated.
- Activities of this component should result in integrated vulnerability assessments (IVA)² of the agriculture sector across FSM's four states, strengthening the institutional support for responding to climate change in the agricultural sector through the establishment of a national and state-level coordination process; establishment of a network of "state-level farmer associations (one for each FSM State)" providing support to local farmers in access to local markets; and ensuring delivery of agriculture related climatic information to local farmers for tailored decision-making, training of farmers and extension agents.

² The activity will utilize the Integrated Vulnerability Assessment (IVA) Framework for Atoll Islands, developed in collaboration with Pacific Community (SPC), Secretariat of the Pacific Regional Environment Programme (SPREP) and German Corporation for International Cooperation GmbH (GIZ), (2016). The IVA Framework utilizes a sustainable livelihoods-based approach that combines the assessment of vulnerability to both climate change and disasters. According to the definition provided in the funding proposal, "The term 'integrated' implies the integration between sectors, scales, disciplines and space."

- (b) **Component 2. Enhance the food security of vulnerable households by introducing climate resilient agriculture practices.** (USD 5,696,400; 66 per cent).

Key outputs of this component are: establish traditional and climate resilient agroforestry systems appropriate for different island systems and customized to the climate conditions being faced established (linked to findings from Component 1 and the Climate Adaptive Agriculture and Resilience Project (CAAR)³ project); build capacity of FSM households and support channels to utilize climate adaptive farming techniques and effective household nutrition, including women-headed households; develop reserve capacity for overcoming periods of climate disruption;

Activities of this component should result in: increase in crop production and quality through the deployment of appropriate climate change adaptation measures for the agriculture sector (for 140 communities); establishing/capacity increase of seed banks and nurseries; and establishing and promoting traditional and climate resilient agroforestry systems appropriate for different island systems and to the climate conditions (linked to findings from Component 1 and the CAAR project). The funding proposal will leverage the model established by the CAAR project to scale up the multiple benefits of climate resilient agriculture (CRA) across FSM, refining the exact intervention through targeted research that will be conducted through Component 1.

- (c) **Component 3. Strengthened climate-resilient value-chains and market linkages across the agriculture sector** (USD 984,650; 11.5 per cent).

Key outputs of this component are: new markets developed and opportunities to increase the availability and affordability of local food supported; local food processing and preservation enhanced; consumption of local product and awareness of benefits of local food increased.

Activities of this component should result in increased income of household farmers and consumption of local food through establishing new markets for local household farmers, business development knowledge enhanced, food processing and preservation enhanced.

8. The interventions are focused on households and communities, reaching 63 per cent (68,250) of the population, where the vulnerability is most present. Further, unlike in some other food-insecure countries, in FSM individual households make the decisions on planting and farming (namely, which crops, when, etc.) and there are no national agriculture campaigns or other pressures to grow specific crops. The project aims to target all farmer households, focusing on those that utilize agriculture as the main source of subsistence, income and livelihood, based on past surveys and census information. The climate smart agriculture activities proposed are estimated to be capable of improving security for 40 per cent of major crops by the end of the project.

9. Anticipated impacts of the project are: increased income for farmers; increased local food consumption; enhanced food processing techniques; improved soil health; and increased crop production and quality. In particular:

- (a) 68,250 (50 per cent female) people directly strengthened with improved climate resiliency and as a consequence with improved food availability and accessibility;

³ Climate Adaptive Agriculture and Resilience Project (CAAR). The CAAR project (funded by USAID) found that restoration agroforestry has great potential for greening degraded lands in a less expensive and participatory way, creating a basis for improved livelihoods, water provision and sustainable food production.

- (b) 12,694 households (HHs) (80 per cent of targeted HHs) use climate resilient agriculture practices to improve decision-making for agriculture and to increase agricultural incomes by at least 10 per cent;
- (c) 70 per cent of targeted HHs utilizing soil erosion mitigation practices, decreasing soil erosion levels by 30 per cent from baseline level;
- (d) 60 per cent of HHs have access to locally processed foods. Locally grown food will increase approximately eight-fold and crop losses will be reduced by 75 per cent from USD 6 million to USD 1.5 million in monetary units;
- (e) 70 per cent increase in crop diversification;
- (f) Direct beneficiary farmers experience an increase in crop yields of at least 30 per cent relative to average historical yields;
- (g) HHs food expenditure share (currently between 32 and 76 per cent of HH expenditure) will decrease by 15 per cent. Annual subsistence income from agriculture will increase from USD 395 at baseline by 10 percent; and
- (h) Food Consumption Score for 80 per cent of HHs will reach an acceptable level.⁴ Household Dietary Diversity Score (HDDS)⁵ and individual DDS will increase by 10 per cent for 80 per cent of households.

10. Climate resilient agriculture packages, which will be developed for particular sites and aim to reduce specific adverse impacts, consist of activities (such as agroforestry and soil rehabilitation) increasing the carbon stocks. Although this is not claimed by the project, it could be considered as a significant co-benefit of the funding proposal.

11. In the independent Technical Advisory Panel (TAP)'s opinion, the impact of this project could not be high for the whole food security system since it does not cover all the elements and pillars of food security process. However, the project will have significant impact on the most vulnerable group of people, those involved in subsistence agriculture and without a stable cash income.

1.2 Paradigm shift potential

Scale: N/A

12. The funding proposal aims to upscale the results of two projects implemented in FSM, the Climate Adaptive Agriculture and Resilience (CARR) programme already completed, and the Coconuts for Life (C4L) programme⁶ which is ongoing. The CAAR programme has introduced the CRA approach to agriculture practice, while the C4L project mainly focuses on development of local markets for vulnerable farmers.

13. The C4L project approach, which is based on the participatory guarantee schemes (PGS) business model and requires behaviour change at the household and community levels in the agriculture sector, will be up-scaled. This approach will be further supplemented through deployment of CRA packages with adaptation activities mitigating climate change impact. For

⁴ The household Food Consumption Score (FCS) is used as a proxy for household food security and is the core indicator for consumption recommended by the World Food Programme. It is a measure of dietary diversity, food frequency and the relative nutritional importance of the food consumed. FCS is calculated using a weighted frequency of consumption of different food groups consumed by a household during the seven days before the survey. See the https://fscluster.org/handbook/Section_two_fcs.html

⁵ HDDS is a proxy measure of household food access. HDDS is calculated based on questions on household consumption of food items from 12 different food groups in previous 24 hours.

⁶ Coconuts-for-Life (C4L) Program Proposal, MCT, September 2017. Document included in Annex 6 of the funding proposal.

this funding proposal, vulnerability to adverse impacts of climate change will be the leading criteria for selection of farmers, locations and activities for implementation of the approach.

14. The behaviour change scheme based on the PGS model established in FSM for coconut production, is founded on an agreement regarding quantity, quality, price, etc. between a purchaser and a producer of an agricultural good, in this case coconuts. The producers of the good are organized into groups, which jointly work to meet the purchaser's demand. PGS groups set up in Chuuk and Pohnpei include farmers who are from the economically and socially most vulnerable groups. These farmers own and/or have access to land to grow, harvest and sell coconuts, and are mostly those with very low income and with very little alternative means to make money.

15. Sub-component 1.4 of the funding proposal will work to expand the ability of the PGS scheme to grow and sell a variety of crops to support all farmers on the main FSM islands. The creation of state-level farmers associations under output 1.4 will also support the consistent and sustainable production of locally grown food to local and domestic markets by providing greater coordination across States, PGS, and crop value chains. Once firmly established, profits from the programme will be used to establish a PGS trust account that will then be used to fund continuation of the programme (establishment of the trust account will be done through the C4L programme). Although the C4L program is beneficial within FSM, there is still the need to establish a state-level association to support the PGS groups at both the state and national levels.

16. The funding proposal also considers alignment with agriculture/other group membership. Following FSM's C4L business model, the project will build on the PGS groups that continue to form in Chuuk and Pohnpei and will be expanded to the other two FSM states. This mechanism will be the central focus for organizing and coordinating beneficiaries. The PGS model is focused on supporting the most vulnerable farmer groups, particularly those with limited access to land and capital in rural communities. As stated in the funding proposal, climate change vulnerability will be the leading criteria for selection of farmers, lands and activities.

17. The funding proposal clearly indicates that the project focus should be on transformational changes in the food security system. Activities planned in the proposal target mainly subsistence farmers as this group is most vulnerable to the impact of climate change on the agriculture sector. Therefore, it is the independent TAP's opinion that the project could not make transformational change in food security system but could significantly improve food availability for the targeted group of population. Having in mind that agriculture is not a priority as regards the impact of climate change mitigation for all four States, it is important that the funding proposal plans to include all four States in the programme and provide more information and increase awareness at the policymaker level.

18. Considering that the current trend of food importation is increasing, the funding proposal concept of strengthening the role of local agriculture and traditional food compared to imported food in order to improve the country's food security system, could be considered as transformative behavioural change. However, from the information provided in the funding proposal and feasibility study on the region's vulnerability and behavioural trends among the young population, the increase in local food production without other strong policy measures seems less realistic for significant transformational changes.

19. Agriculture and particularly subsistence agriculture is a crucial element of the food security system but is highly vulnerable to climate change and particularly to the extreme weather events that have an acute adverse impact on the country's territory while prevention measures are limited. So far, the country does not have a food security policy and the impact of climate change on the entire food security system is not assessed. This makes it difficult to

assess the level of contribution this project can make to transformation of food security for this targeted group.

1.3 Sustainable development potential

Scale: N/A

20. The funding proposal contributes to various aspects of sustainable development and in particular to food security and its three major pillars: availability of food, access to food and stability of food supply. Key activities of the project are focused on rehabilitation of biodiversity and degraded agricultural lands, to increase the livelihood of those most vulnerable to climate change such as household/subsistence farmers. The funding proposal plans training programmes to provide knowledge to subsistence farmers on how to mitigate adverse impacts of climate change and improve the productivity of lands and quality of crops. Hence, the funding proposal promotes mechanisms for raising capacity for effective climate change-related planning and management in small island developing States, including focusing on women, youth and local and marginalized communities (sustainable development goals (SDG) 13.3b).

21. **Gender violence**⁷ and inequality are highlighted in the GCF country programme as one of the risk factors exacerbated during hazards. The funding proposal will fundamentally tackle this risk through increasing economic opportunities for women, and increasing women's leadership and decision-making in the agriculture sector. The project plans to reduce violence against women proactively utilizing UN Women's guidance to support implementation of the Global Women's Safety Framework. This will be utilised in integrating personnel for the project as well as through development of specific training modules to include agriculture extension agents. These activities contribute to SDG 5 (achieve gender equality and empower all women and girls).

22. **Economic benefit.** The funding proposal contributes to the following SDGs: SDG 1 – poverty alleviation through new income opportunities and reduction of household expenditures on imported food; SDG 2 – end hunger, achieve food security and improved nutrition and promote sustainable agriculture, food security for households (targeted by components 2 and 3 of the funding proposal); SDG 8 – sustainable jobs will be created and work for local household farmers will be improved through facilitation of market access and expanded opportunities for market participation (component 1, through PGS networks). SDG 13 – climate resiliency and adaptation for vulnerable communities through sustainable agriculture and markets.

23. **Biodiversity conservation.** SDG 15 – conservation and integration of agroforestry techniques is part of CRA packages planned in component 2 for 140 farming communities which help to avoid land and soil loss and conserve native ecosystems. Activities planned in the proposal contribute to: SDG 15.9 – integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts; SDG 15.2 – promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally; and SDG 15.3 – by 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world. Land degradation is the most adverse impact of climate change in FSM and key activities are dedicated to sustainable land management.

24. The independent TAP considers that the potential of the project to contribute to sustainable development is significant.

⁷ The FSM National Climate Change and Health Action Plan (2012), highlights that 'it is also important to recognise the risk of violence, including sexual violence, that often occurs in the aftermath of natural disasters, and which disproportionately affects women and children.'

1.4 Needs of the recipient

Scale: N/A

25. The GCF country programme for FSM, prepared in 2017, reports that as a SIDS, the vulnerability profile of FSM is characterised by its environmental fragility, remoteness and geographic dispersion across a vast ocean. It is further characterised by fragmented governance, underdeveloped infrastructure and low availability of technical capacity. These challenges are compounded by high exposure to economic shocks, natural disasters and climate change. Table 3 of the report concluded that at present, all FSM States have a 'medium to low' level of adaptive capacity required to ensure adaptation to the effects of climate change.

26. From the barrier assessment conducted during preparation of the country programme, the independent TAP would like to highlight some of the capacity constraints for FSM that have direct adverse impacts on effectiveness of adaptation activities and sustainable development. These are a fragile natural environment, widely dispersed geography, low resilience to natural disasters, limited productive use of land and management of climate related soil degradation, limited institutional and technical capacity, constrained private sector development, an apparent rate of gender-based violence and inequality.

27. The Integrated Agriculture Census Report (2020)⁸ indicates that approximately 40 per cent of the land in FSM is used for agricultural purposes and over 90 per cent of FSM households have access to land that can be used for agriculture. Subsistence agriculture is increasing in the country. Much of the land is used for agroforestry and tree crops such as coconut, breadfruit and banana (about 90 per cent of households). Additionally, about 36 per cent of households grow root crops like yams, while only 17 per cent of households grow vegetable crops such as peppers. High dependence on agriculture and geographical location make FSM highly vulnerable to climate change.

28. Limited availability of land (inundation of coastal zones, complex system of tenure), a high level of land degradation and low soil fertility of agricultural lands, all exacerbated by the adverse impacts of climate change, lead to the low productivity and quality of yield, which is mainly used by farmers for self-consumption. Across all States and crops the largest number of sales reported were directly to the consumer (38 per cent), followed by sales to a public market (35 per cent). Sales to a local shop were also significant at 19 per cent, but sales to a restaurant or hotel were low at 2 per cent, less than sales reported to others at 6 per cent. Across FSM, over 50 per cent of households with land for agriculture reported that they received no income from agriculture. The funding proposal links these sales rates to the availability of and accessibility to markets. In the view of independent TAP, this low share of sale to shops and restaurants could be the result of a low-quality product. This project could significantly improve product quality.

29. The Second National Communication of FSM informs that the immediate coastal areas in all the nation's States are the most heavily developed, providing homes, infrastructure and economic opportunities for the majority of the population. On high islands, options for abandoning coastal areas affected by inundation or flooding and moving landward are quite limited due to steep slopes inland, and complex land tenure systems. On atolls, saltwater intrusion is already destroying taro and other crops, and damaging groundwater supplies making it necessary for islet inhabitants to migrate.

30. As a result of adverse climate change impact (described in paragraph 3 above), soil salinity is increasing, and is the greatest threat to crop productivity on the atolls of FSM, since the majority of agricultural production occurs in the low-lying areas of the high, volcanic islands (approximately 21,700 ha of land). These areas are increasingly subject to lowland flooding as

⁸ FSM Integrated Agriculture Census 2016 (2020). Available at: http://www.fsmrd.fm/wp-content/uploads/2020/06/200120_FSM_IAC_2016.pdf

well as seawater inundation from sea level rise.⁹ Agricultural lands are degraded or washed out due to a rise in sea level and the soil salinity level, with the area damaged estimated at 6,500 ha, and over 3,300 farmers affected. Almost 100 per cent of the nearly 35 inhabited outer islands in FSM lie within the 2-metre zone of sea level rise and within a 5-metre zone of storm surges, where farmers have had to abandon taro patches because of inundation in the past. In particular, in 2007 in Yap saltwater intrusion during tidal surges led to the destruction of 90 per cent of the taro crop on the islet of Falalop, Ulithi atoll, and 75 per cent of the taro crop on the islet of Falalop, Woleai atoll. In the same year, approximately 90 per cent of all taro was destroyed in the outer islands of Chuuk, where an estimated 25 per cent of the State's population resides. Assessment of damage following tidal surges that occurred in 2008 indicated substantial damage to four staple crops (taro, breadfruit, banana, and coconut) in the Chuuk State Islands – particularly the subsistence crops of taro and breadfruit which were severely damaged or fully destroyed.¹⁰ 75 per cent of the breadfruit trees and 68 per cent of the coconut trees were either severely stressed and/or dying as a result of the El Nino induced drought in 1997–1998. Tropical Storm Chataan struck the islands of Chuuk in 2002. The storm resulted in 500 millimetres of rainfall in a 24-hour period, which triggered 265 documented landslides. The landslides caused the destruction or damage of 231 structures, including homes, schools, community centres and medical dispensaries.

31. The United States Agency for International Development financial assessment report¹¹ on climate change and disaster risk for FSM identified several barriers and challenges including: lack of government coordination on climate adaptation, limited budgets for operationalizing climate change, fragmented climate finance, a lack of capacity in national and State governments to effectively coordinate climate finance and adaptation priorities, and limited ability to build and sustain local capacity in a manner that is consistent and builds corporate knowledge.

32. A special audit on the management of climate change and food security found that there is no comprehensive action plan to address the adverse impacts of climate change on food security amongst government institutions and duplication of efforts/overlapping activities between national and State, as well as non-governmental organizations (NGOs), was identified.

33. The independent TAP noticed that the GCF country programme does not include this funding proposal or any agriculture project in the list of GCF projects, but the food and water security programme is prioritized in the food security context. This fact, once again, demonstrates that coordinated planning capacity should be strengthened in the country as a multisectoral coordination and integral approach is required when dealing with the climate change adaptation process. Recipients have an obvious and urgent need for support in climate change related capacity-building to improve adaptive capacities in the country and especially among farmers.

1.5 Country ownership

Scale: N/A

34. The funding proposal is developed by the direct access entity (DAE). The executing entity (EE) is the FSM national Government acting through the National Department of Resources and Development and the National Department of Environment, Climate Change and Emergency Management, and the College of Micronesia-FSM (COM-FSM). During the formulation of the project concept and this funding proposal the following national institutions were consulted: Department of Finance and Administration, which is the nationally designated

⁹ GCF Country Programme – Federated States of Micronesia. Available at:

<https://www.greenclimate.fund/sites/default/files/document/micronesia-country-programme.pdf>

¹⁰ Post Disaster Assessments of FSM Outer Islands via FSMNC2 p. 81. Available at: <https://www.fsmstatistics.fm/wp-content/uploads/2019/10/2-2nd-National-Communiation-to-the-UNFCCC.pdf>

¹¹ FSM Climate Change and Disaster Risk Finance Assessment. Available at: <https://fsm-data.sprep.org/dataset/fsm-climate-change-and-disaster-risk-finance-assessment-%E2%80%93-2019>

authority to GCF; Pohnpei Weather Services and Pohnpei State-level Agriculture Services; Pohnpei State-level Environmental Protection Agency; private sector, mainly market actors; and Pohnpei farmers' cooperative. State and municipal government authorities representing all areas of governance, NGO's, women's organizations, farmers organizations, resource managers, community members, and regional organizations were also extensively consulted.

35. The FSM Nationally Determined Contribution (NDC) document mentions "Nationwide Integrated Disaster Risk Management and Climate Change Policy 2013" as a key policy document for adaptation activities under the Paris Agreement. This document provides a nationwide, broader, strategic vision of adaptation priorities for the country in climate change and disaster. Adaptation of economic activities to gradual changes in average temperature, sea level rise, ocean acidification and precipitation is a priority strategic objective identified by the country which this funding proposal supports. Also, the project will support strategic outputs planned under this policy document, such as reducing reliance on imported commodities (specifically –food in this case) and ensuring robust agriculture, forestry and fisheries sectors that are able to rapidly recover from hazards and adapt positively to changing environmental circumstances.

36. A subsequent action plan for climate change and disaster risk management is the "Joint State Action Plan for Disaster Risk Management and Climate Change (2017)", which refers more specifically to the single States, though the nationwide agriculture policy is common to all of them. The present funding proposal is aligned with national policy targets such as: food security, safety and nutritional health; improvement of farm incomes and livelihoods with particular focus on gender and vulnerable groups; preservation and protection of culture, traditional knowledge and practices; supporting sustainable economic growth and improving the balance of trade; and improvement of natural resource management.

37. The DAE and national implementation make country ownership strong. However, lack of coordination among different policy documents and programmes was observed by the independent TAP and the same is reported in the GCF country programme. As an example, this funding proposal is not part of the country programme, though it contributes to food security which is in the GCF list of projects, but in relation to water (Food and Water Security Programme). The independent TAP recommends that the AE should contribute to mitigating gaps in coordination through capacity-building activities (component 1). This is also considered to be a priority area in most related documents, including the GCF country programme.

38. The independent TAP fully recognises the differences among States' policies and priorities related to the availability of territories, agricultural lands and other natural resources, severity of climate change impact, geographical location etc., which are clearly demonstrated in the "Joint State Action Plan for Disaster Risk Management and Climate Change (2017)" for all four States, and recommends to the AE to take these differences and priorities into consideration when planning specific activities.

1.6 Efficiency and effectiveness

Scale: N/A

39. The independent TAP confirms that the funding proposal budget is effectively distributed among the three components planned within the proposal: the highest share (66 per cent) of GCF budget is allocated for the activities of component 2 dedicated to deploying the CRA packages through the most vulnerable households of farmers/subsistence farmers, improving the resilience of agricultural produce to climate impact, increasing crop productivity and quality.

40. The following activities are planned in the proposal to ensure the future sustainability of upscaled activities:

- (a) Establishment of PGS business models, farmers associations and agricultural networks which should ensure long-term adaptive management, knowledge and innovation sharing across the States and could be considered as a vehicle for directly reaching communities and households and continuously upscaling market value chains. PGS trust accounts will be established for saving the profits from the programme that will then be used to fund its continuation;
 - (b) Development of awareness and opportunities for market participation for household farmers. The project is creating new structures (both formal and informal) with a positive feedback loop that will provide financial incentives to replicate results. Should the markets and structures established by the project be successful, this can drive additional market development beyond the initial project impact;
 - (c) The funding proposal will be implemented nationally utilizing local partners, government institutions and an academic/research institution to minimize the use of international consultants. The project will utilize local systems and expertise already in place to mainstream climate considerations. The implementation structure will have a lasting impact on those experts working in the agriculture sector to ensure climate considerations are incorporated across research, training, policy development and future implementation;
41. The project includes a wide variety of targeted trainings, most notably on the use of climate information, utilization of climate-smart agroforestry practices, household food processing, market access and valorization, among others, all of which are skills that can and will be utilized by the communities and households to sustain food security components beyond the project implementation period; and
- (a) Development of nurseries and seed banks to ensure longevity of the project impact by creating a self-sustaining supply of climate resilient seed varieties that can be distributed to communities and households both proactively and post-disaster. These systems provide an additional measure of resiliency that can support and sustain project components for improved food security even if there are larger shocks to a specific State or community. To ensure sustainability of the nurseries and seed banks they will be managed by the farmers' associations as businesses. The selling of seedlings can support operational costs and further support the associations.
42. Co-financing provided by the Micronesia Conservation Trust (AE), Department of Environment Climate Emergency Management (DECCEM), National Department of Resources and Development and COM-FSM is not high (1:0.094), however it should be taken into consideration that FSM is a small island developing State and the funding proposal mainly increases climate change adaptive capacities of subsistence farmers, the most vulnerable group.
43. The funding proposal involves in this process all key players (national and State governmental structures, civil society, NGOs, etc.) that can have an impact on long-term sustainability of the project results.
44. The independent TAP recognizes that the project could have a significant impact on strengthening adaptive capacities of household farmers and will contribute to the establishment of institutions for ensuring sustainability of upscaled processes and accessibility of the food security system. However, efficiency and effectiveness of the results also highly depend on the existence of an enabling environment. The independent TAP considers that high effectiveness of this or other agricultural projects on food security could be achieved when an overarching food security policy exists. While food security is considered as a high priority for FSM in disaster risk reduction and climate change impact mitigation strategic/policy documents, the country does not have a food security policy, which might be a constraint to achieving high efficiency results.

45. The funding proposal has components relating to post-disaster impact recovery (soil and agroforestry rehabilitation) and preparedness to disaster risks mitigation (seed banks, nurseries, storage capacity, CRA packages, early warning systems, etc.). However, a climate change policy document (2019) informs that the domestic insurance industry is under-developed, with low demand and low product supply but there is scope for collaboration with private insurers regarding development of the traditional market, including for housing, and socially-desirable services such as food and agriculture insurance. In the medium term there are policy to explore insurance options for key government infrastructure and developing insurance markets for housing, flood risk and agriculture. It is the independent TAP's opinion that to ensure the sustainability of implemented measures and decrease the impact of extreme events typical for FSM States, this option should also be explored by the AE, particularly for planning climate change impact reduction on food storage.

46. In the absence of a food security policy regulating food imports, prices, food quality and diet, it is not possible to assess the effectiveness of this funding proposal in the food security system of FSM. The independent TAP sees some risks that traditional food might not be competitive with imported food if there are no regulations on prices and food quality and the PGS business model will not be very successful. However, the independent TAP confirms that the funding proposal has potential to improve the food security of this particularly vulnerable group of subsistence farmers.

47. During the assessment process, the independent TAP identified some gaps in the differentiation of climate driven and non-climate driven, anthropogenic, impacts on agriculture when developing CRA packages which could have a crucial influence on selecting the relevant impact mitigation measures and consequently on the final results. In order to close such gaps, the independent TAP recommends approval with the conditions below.

II. Overall remarks from the independent Technical Advisory Panel

48. The independent TAP recommends this funding proposal for approval by the GCF Board with the following conditions:

- (a) The AE shall provide, before the second disbursement of GCF proceeds, to the satisfaction of the Secretariat:
 - (i) an operational manual including: (A) a detailed assessment of the impact of climate change on the agriculture sector nationwide and for each state in the FSM; (B) criteria for selection of climate resilient agriculture ("CRA") packages, which shall take into consideration site- and crop-specific impact of climate change; and (C) a comprehensive baseline study of all monitoring indicators provided in the funding proposal section D.2 ("Impacts measured by GCF indicators"); and
 - (ii) Three CRA packages developed for three different agricultural activities (one for each of sustainable land management, agroforestry, and climate change impact resistant crops) which will include information on location, observed site-specific climate change and related impact, climate change adverse impact mitigation measures planned in the activities, risk assessment, mechanisms for ensuring the long-term sustainability of results, indicators for results monitoring and monitoring modality

49. The independent TAP also provides the following recommendation to the Accredited Entity:

- (a) To ensure the sustainability of implemented measures and to decrease the impact of extreme events typical for FSM States, the independent TAP recommends the AE to



explore more options for disaster impact mitigation. In particular, the development of a domestic insurance industry in collaboration with private insurers, including housing and food and agriculture insurance.

Response from the accredited entity to the independent Technical Advisory Panel's assessment (SAP020)

Proposal name:	Climate resilient food security for farming households across the Federated States of Micronesia (FSM)
Accredited entity:	Micronesia Conservation Trust (MCT)
Country/(ies):	Federated States of Micronesia
Project/programme size:	Micro

Impact potential

MCT agrees with the independent TAP's assessment that this project will increase food security throughout FSM and result in more resilient and secure households in the face of ongoing and future climate change impacts.

The project will address the four food security pillars (availability, access, utilization and stability) in FSM by promoting resilient agriculture through climate-resilient interventions to reduce the shock of a changing climate on agricultural productivity, improving value chains for utilization and stability of production (processing and storage techniques, school programs, market connectivity, etc.), and providing critical bridging capacity for resiliency and stability of agricultural productivity (processing and storage techniques, nurseries, seed banks, etc.). Additionally, the project will work in conjunction with other climate change adaptation and food security projects in FSM and the region, which focus on other aspects of food security (e.g. fisheries management) that are not covered within the scope of this SAP (see Annex 1 in the Pre-Feasibility Study).

Paradigm shift potential

MCT agrees with the independent TAP's assessment that the project will result in a paradigm shift due as the overall project is expected to become the critical foundation for sustained efforts on food security as part of the national response to climate change. The project supports a shifting pathway for FSM by **Promoting Resilient Agriculture** through climate-resilient interventions to reduce the shock of a changing climate on agricultural productivity. The proposed resilient agriculture interventions will directly respond to key regional, national and local climate hazards and the specific risks they pose to agricultural production, while building more resilient communities. The interventions outlined in this project will support adaptation and productivity targeted toward unique farmer groups to introduce improved climate-resilient varieties, innovative adaptation practices and technologies, diversification, and explore business models to ensure these practices are financially viable in the long-term.

This project is the first of its kind in FSM that will transform the landscape for the terrestrial agriculture sector across FSM, creating linkages across States that never existed, building the political framework and commitment through State/national agriculture policies, developing social and market structures for CSA, and transforming the capacity for farmers, advisors, and

others throughout the agricultural value chain to enable future initiatives for food security to build off, particularly for other sectors like fisheries and livestock.

Sustainable development potential

MCT agrees with the independent TAP's assessment that the project will significantly contribute to sustainable development goals, including through gender mainstreaming, economic benefits and biodiversity conservation.

Needs of the recipient

MCT would like to highlight that FSM was one of the first countries to complete a GCF Country Programme (completed September 2017). Earlier versions of the country programmes did not identify specific project portfolios to the level of detail that is now commonplace. However, the project aligns with the priority FSM Food and Water Security program as identified in the FSM Country Programme, and the FSM NDA requested that this project be prioritized and developed under this GCF Country Programme. Additionally (as mentioned above) given the limited funding of this SAP, the project will work in conjunction with and complementary to other adaptation projects in FSM (see Annex 1 in the Pre-Feasibility Study).

Country ownership

One of the primary benefits of this project is that it brings State and National governments and stakeholders together to ensure food security policies are effective at both levels of governance. Additionally, the climate-smart agriculture packages that will be developed under Component 2 of the project will be designed to address the specific geographic and climatic conditions of the communities that the packages will be implemented within.

Efficiency and effectiveness

MCT would like to highlight that the PGS model has already been proven effective in FSM. To date, the Coconuts for Life (C4L) project has established a total of 60 PGS groups across FSM with a plan to establish another 40-60. The SAP project will build on the existing PGS business model, which focuses on supporting the most vulnerable farmer groups, particularly those with limited access to land and capital in rural communities.

Regarding the climate-smart agriculture packages, MCT is cognizant of designing these packages in a way that is climate-driven to result in increased food security for households throughout FSM.

Overall remarks from the independent Technical Advisory Panel:

MCT and the FSM government would like to extend our gratitude to the Secretariat and the independent TAP for review and assistance in refining this project. We believe that working with both the Secretariat and the independent TAP has strengthened the project and will allow for more effective implementation.



Additionally, we agree with the independent TAP that this food security project is much needed in FSM and will allow for transformational change in the face of ongoing and future climate change impacts to the country.



Annex 4: Gender Assessment and Action Plan (GAP)

*“Climate-resilient food security for farming households
across the Federated States of Micronesia”*

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Abbreviations

CBO	Community-based Organization
CCA	Climate Change Adaptation
CEDAW	Convention on the Elimination of all Forms of Discrimination Against
CP	Women
	Country Program
CRC	Convention of the Rights of Children
CRPD	Convention on the Rights of People with Disabilities
CSO	Civil society organization
DECEM	Department of Environment, Climate Change & Emergency Management
DHESA	Department of Health and Social Affairs
DID	Disability inclusive development
DOFA	Department of Finance and Administration
DRR	Disaster Risk Reduction
DiDRR	Disability inclusive disaster risk reduction
DPO	Disabled Persons Organization
FSM	Federated States of Micronesia
IEC	Information, education and communication
IFRC	International Federation of Red Cross
GAP	Gender Action Plan
GBV	Gender Based Violence
GCF	Green Climate Fund
GDD	Gender Disaggregated Data
GDI	Gender Development Index
GDO	Gender Development Office
GSI	Gender and Social Inclusion
GII	Gender Inequality Index
HIV	Human Immunodeficiency Virus
IRCP	Island Food Community of Pohnpei
NCD	Non-Communicable Diseases
NGP	National Gender Policy
NDOE	National Department of Education
MoV	Means of Verification
PLEGD	Pacific Leaders Genders Equality Declaration
PWD	Persons with Disability
R&D	Department of Resources & Development
SAP	Simplified Approval Process (Pilot Scheme)
SDGs	Sustainable Development Goals
SDP	Strategic Development Plan
SIDS	Small Island Developing State
SPC	Pacific Community
STEM	Science, Technology, Engineering, Math
ToC	Theory of Change
TSM	Temporary Special Measure
UNFCCC	United Nations Framework Convention on Climate Change
UN Women	United Nations Agency for Women
VAW	Violence against Women

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1. Background, Purpose and Rationale

Preparation of the proposed *Climate-resilient food security for farming households across the Federated States of Micronesia* (FSM) project for the Green Climate Fund (GCF) was carried out by the Micronesia Conservation Trust (MCT) in collaboration with the USAID funded Climate Ready Project.

This proposal is one of 14 selected priority projects under the FSM GCF Country Program (CP), which was developed in consultation with stakeholders from government departments, civil society organizations (CSOs) including non-government and inter-governmental agencies, women and youth groups, and the private sector. In 2018, the Department of Finance and Administration (DOFA), the National Designated Authority (NDA) for the GCF in FSM, requested the Micronesia Conservation Trust to assist in preparing this proposal.

With an Environmental Vulnerability Index score of 392, the FSM is one of the most highly vulnerable Small Island Developing States (SIDS) in the Pacific region. If no corrective action is taken, projected impacts from climate change over the next few decades include rising sea levels, increased temperature, increased rainfall, increased tidal surges, ocean acidification, as well as increased severity of extreme events like tidal surges, rainfall and storm events, and extreme heat, could severely threaten food security of FSM communities. Such impacts will cause loss of arable land, price/supply shocks, health and nutrition issues, and forced migration of outlying communities among other stressors.

FSM's most vulnerable communities have not significantly benefitted from previous one-off pilot projects aimed at improving food security and sustaining resilience in the face of climate change. With support from the GCF, the proposed project will address multiple barriers at one time by: strengthening the enabling environment; providing an evidence-base for specific interventions; developing new opportunities for market access and development, and targeting new climate-smart agriculture (CSA)¹ techniques and opportunities to enhance income and improve food security for FSM communities.

The proposed project will provide benefits to vulnerable communities in the four states of the FSM (Chuuk, Kosrae, Pohnpei and Yap), who depend largely on their natural resources for subsistence and livelihoods and who are already facing significant climate change impacts. Direct community involvement in training, planning, and implementation of project activities will ensure direct alignment to local needs and ultimately help to address the needs of the most vulnerable communities by providing for increased resource availability, access to sources of protein and other nutrition, opportunities for income-generation and improved food security and climate resiliency.

This project will enable FSM to establish a “whole of system” methodology based on the four-pillar methodology (availability, accessibility, utilization and stability); highlighting the relationship between the urban, rural and neighboring island communities; and developing an integrated approach that combines social vulnerability (including traditional and gender approaches) and technical climate change impact analysis. It will also provide a critical foundation for sustainable food security as part of the national response to climate change. This will involve strengthening policy frameworks and political commitment and enhancing the capacity of farmers (male and female), and others in the agricultural value chain. Together, these activities will provide a platform to enable future food security initiatives, involving fisheries and livestock, to build upon.

¹ An approach that helps to guide actions needed to transform and reorient agricultural systems to effectively support development and ensure food security in a changing climate

This project will provide economic, social and environmental benefits to FSM citizens, with particular attention to meeting the needs of vulnerable groups, through delivery of its three primary outcomes:

- i. Enhanced enabling environment for adaptive investment,
- ii. Enhanced food security through CSA, and
- iii. Strengthened climate-resilient value chains and markets.

The purpose of this gender analysis and action plan (GAP) is to: i) assess the extent and causes of inequity and exclusion in the FSM agriculture sector; ii) identify opportunities and strategies to redress these constraints, building on current initiatives and best practice approaches, and iii) outline interventions to ensure women and other vulnerable groups benefit fully from project activities. In so doing, the GAP seeks to build on women’s diverse knowledge and capacities, and build capacity within communities/households and organizations for resilient, “climate smart” food security.

Methodology

The gender analysis and GAP was based on a desk study as well as several stakeholder consultations that took place from 2019 through early 2020 (see list of stakeholder attendees in Appendix 1). The stakeholder meetings included a total of 106 participants across the 4 FSM States. Out of these 45 of the participants were women and 61 were men with representatives from government agencies, NGOs, State agencies, and the private sector.

Through these discussions, participants specifically requested that processing techniques for crop staples be included in the project activities to ensure economic opportunity for women, who own the business or are involved in food preservation and sales. Activity xxx under Outcome 3 was explicitly designed to incorporate this request from Stakeholders

Once developed, the GAP was discussed with the four umbrella women’s groups (November 2020), one from each State:

1. Chuuk Women Council
2. Kosrae Women Association
3. Pohnpei Women Council
4. Yap Women Association

Each of these groups prepared a list of member organizations that are currently working in some way within the agriculture sector (see section 3.8). The 4 umbrella groups will act as partners to the project and will facilitate interaction and inclusion of the key women’s groups throughout the implementation of the project. More detail on women’s groups in FSM are included in section 3.8 below.

2. Enabling Environment

There are a number of laws, policies and plans related to achieving gender equity and social inclusion outcomes across all development sectors in the FSM as highlighted in this section.

2.1 Legislative Policy and Planning Frameworks

The Constitution of the FSM states that no law shall be enacted in the Trust Territory which discriminates against any person on the basis of race, sex, language, or religion, nor shall the equal protection of the laws be denied. Although there is no national legislation criminalizing sexual assault, FSM has legislation criminalizing both sexual assault with penetration and sexual intercourse with girls under the age of thirteen. At state level, two governments have passed Family Protection Acts

including Pohnpei (2017) and Kosrae (2014). Chuuk and Yap States have yet to pass family protection legislation.²

International Commitments

The FSM has ratified a range of international human rights conventions including, amongst others: Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW - 2004)³ and the Optional Protocol on the Involvement of Children in Armed Conflict; the Convention for the Suppression of the Traffic in Persons and Exploitation of the Prostitution of Others; the Convention on the Rights of the Child (CRC - 1993) and the Optional Protocol on Sale of Children, Child Prostitution and Child Pornography; and has signed the Convention on the Rights of People with Disabilities (CDRP - 2017).

Further, FSM is a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), ratified the Paris Agreement and submitted its Intended Nationally Determined Contribution in November 2015. In line with the Paris Agreement, which states that climate change actions need to “be guided by respect for human rights, gender equality and the empowerment of women,” and follow “a country-driven, gender-responsive, participatory and fully transparent approach,” successive UNFCCC National Communications have addressed the impacts of climate change on women and other vulnerable groups, including the need for increased focus on social components such as gender and social inclusion (GSI) issues.

This need to increase attention to GSI issues is also stressed in the UNFCCC Gender Action Plan (GAP), adopted by world leaders at COP23. Five critical actions to achieve gender objectives are outlined in this GAP, including: 1) Capacity building, knowledge sharing and communication; 2) gender balance, participation and women’s leadership; 3) coherence consistent implementation of gender-related mandates and activities; 4) gender-responsive implementation and means of implementation, and 5) monitoring and reporting.

National Strategic Development Plan

The FSM Strategic Development Plan (SDP) 2004 – 2023 highlights seven specific goals aimed at improving gender equity and social inclusion.⁴ These include:

- Strategic Goal 1:** Enhance and promote the cultural, economic, legal, political and social development of women and children throughout their life cycles
- Strategic Goal 2:** Enhance the leadership capacity and roles of women
- Strategic Goal 3:** Mainstream gender issues into decision-making, policies and strategic development plans
- Strategic Goal 4:** Maximize women’s contribution to and participation in democratic and, development processes by creating opportunities for women’s active involvement
- Strategic Goal 5:** Strengthen the institutional capacity of the women’s programs in FSM
- Strategic Goal 6:** Strengthen the institutional capacity, effectiveness and impact of youth organizations

² <https://pacificwomen.org/wp-content/uploads/2019/01/FSM-Pacific-Women-country-plan-summary-Jan-2019.pdf>

³ While the CEDAW was ratified, a 2004 review by UN Women found that FSM was non-compliant on 61% of the recognized indicators of legal compliance.

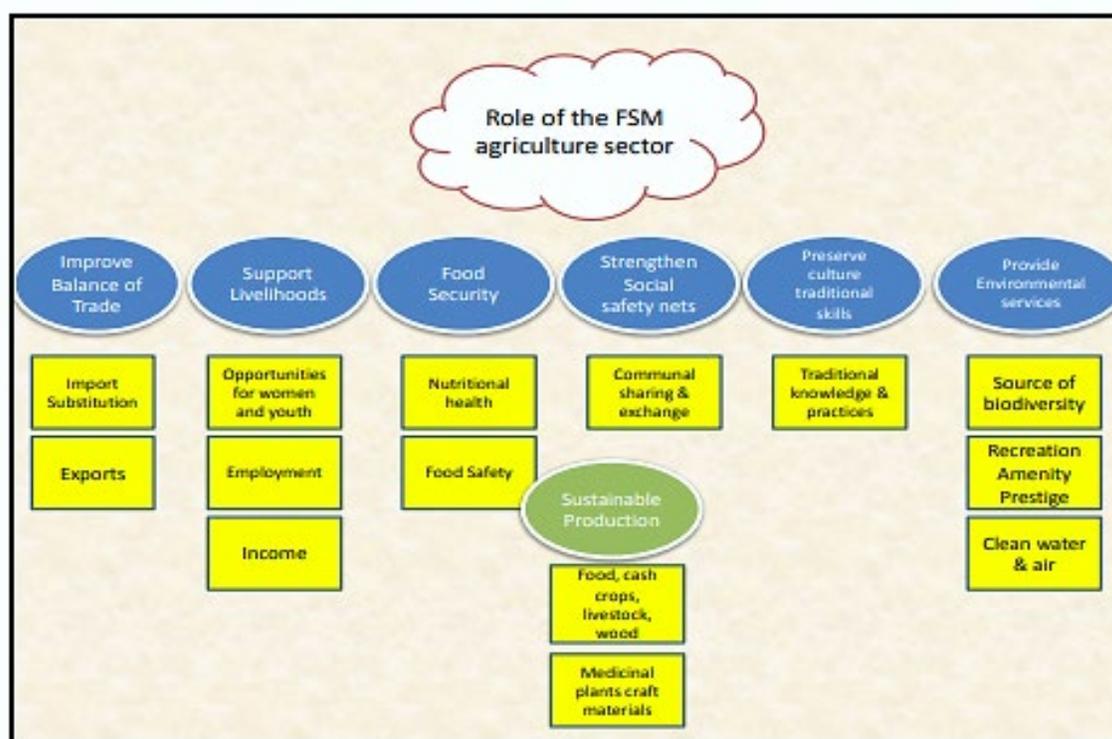
⁴ FSM National Strategic Development Plan 2004 – 2023, Government of the FSM

Strategic Goal 7: Strengthen youth development through social, economic and political participation.

National Agriculture Policy

The principal policy framework driving food security and agriculture planning and implementation in FSM is the National Agriculture Policy. This policy includes seven guiding principles considered essential to sustain the resource base, protect cultural values and promote social and economic development - one of which is “social and gender equity.” It also identifies six policy goals, including *Improving farm incomes and livelihoods with particular focus on gender and vulnerable groups.*⁵

Figure 1: Role of the Agriculture Sector in the FSM



Source: FSM Agriculture Policy, page 11

The Figure above shows the significance of the agriculture sector in the FSM. Gender inclusive objectives in the National Agriculture Policy relevant to the project include the following, all of which are supported by the proposed project:

1. Improve gender disaggregated socio-economic data on farm households;
2. Ensure gender balance in recruitment of training staff and enrolment of students on training courses;
3. Adopt participatory and community-based approaches to promote local food production, healthy lifestyles and sustainable diets, and
4. Ensure extension programs are gender focused and gender responsive.

⁵ National Agriculture Policy 2012-2016, Department of Resources and Development, Federated States of Micronesia

National Gender Policy

The National Gender Policy (NGP) 2018 – 2023, endorsed by the FSM Government in May 2018 is intended to “promote gender equity, equality, social justice and sustainable development in the country”⁶. The NGP is aligned with: the goals and objectives of the National Strategic Development Plan 2004-2023; the Pacific Leaders Genders Equality Declaration (PLEGD); the Convention on the Elimination of all forms of Discrimination against Women (CEDAW), the Convention on the Rights of People with Disabilities, and the mandate of the Department of Health and Social Affairs and State Offices responsible for Social Services.

The NGP commits the FSM Government to take action in the following six areas:

1. Women’s advancement
2. Gender mainstreaming
3. Strengthening women’s programming
4. Strengthening youth organizations programming and leadership
5. Establishing social inclusion and social services for the elderly, and
6. Addressing the economic, political, social and legal needs of people with disabilities and those with special needs.

The National Gender Policy is expected to ensure high-level accountability across national and state governments, working in collaboration with local Women’s Council and Associations, to achieve identified gender outcomes. It is also expected that organizations serving youth and people with disabilities (PWD) will collaborate to achieve social inclusion objectives.

Figure 2: National and State Laws and Services to Advance GSI

	Chuuk	Kosrae	Pohnpei	Yap	FSM
No. staff responsible for GSI policy and programs	One in governor’s office	No visible focal point	Social services Team of 3 in health:	At least 3 staff	3 staff plus one external advisor (social affairs DHSA)
Domestic violence laws	No	Yes	Yes	No	
Accessibility law	No	Yes	Yes	Yes	
Social services provided in addition to health and education	Some federal programs and others accessed to provide support to states, typically through education and health services. No state social programs such as victim support or child protection services. Personal loans for housing through FSM Development Bank, United States Department of Agriculture rural development and housing authorities. Variable levels of program activity by NGOs in different states.				
Financial support for NGOs	Several NGOs have accessed funding for buildings. Yap state provides funding support for key NGOs. Congress initiates FSM government grants to NGOs.				
Engagement with civil society or traditional leadership	Not systematic	Annual, broad-based engagement	Regular consultation with traditional leaders	Traditional leader councils have veto rights	Departments have varying models for engaging with states

⁶ Twentieth Congress of the Federated States of Micronesia Fourth Regular Session, 2018. C.R. NO. 20-102

Source: *FSM Gender Stock Take*⁷

2.2 Policy Coordination and Implementation

The Gender Development Office (GDO), under the Department of Health and Social Affairs (DHESA), is the government's focal point agency responsible for gender issues in the FSM. Previous assessments⁸ on the overall effectiveness of this Office have highlighted that:

- The GDO is strategically located within central government structure to influence the integration of gender issues across the policy, programming and resource allocation spectra;
- The GDO has resources and capacity and no process to facilitate the mainstreaming of gender and women's human rights across parts of government,
- GDO includes expertise and experience in gender and human rights analysis and integration, particularly when it comes to research and statistical support, gender-related planning and analysis, project management, information management and dissemination and evaluation.

According to a recent review conducted by the Government of Australia, *Pacific Women Program*, FSM is in “the early stages of introducing and implementing a legislative framework for gender equality”, which includes legislation to support a temporary special measure (TSM) to increase the number of women in parliament.⁹ Some of the obstacles to mainstreaming gender at legislative and policy level identified in previous studies¹⁰ include the following:

- The lack of a proactive approach to ensuring that women are able to exercise their de facto legal rights as established in FSM law. Where legal deficiencies exist, these generally relate to sexual assault and rape, domestic violence and human trafficking, as well as lack of consistency across the four states in the age of sexual consent, in grounds for divorce, and in child custody;
- Budgets for national and state programs cover only operational costs, including salary, travel and office supplies, but no funds are allocated for development programs. As such, these funds need to be secured from development partners and the US Federal Funding system;
- The lack of females in political positions and senior decision-making roles means that women's voice is not heard at the legislative and executive levels of government;
- Micronesian societies (with the exception of Yap and a few atolls in Pohnpei), emphasize matrilineal descent where identities, titles, rights and acquisition to property are traced through female hereditary lines. Through colonization, women's rights to land ownership and their access to resources have changed from traditional matrilineal descent to a system with most decision-making related to land ownership and land use being retained by male members of the family, and

⁷ FSM First Voluntary National Review of the Implementation of the 2030 Agenda for Sustainable Development (2019)

⁸ https://www.spc.int/sites/default/files/wordpresscontent/wp-content/uploads/2017/03/web_2-FSM_gender_stocktake.pdf

⁹ Australian Government Department of Foreign Affairs and Trade, 2019

¹⁰ https://www.spc.int/sites/default/files/wordpresscontent/wp-content/uploads/2017/03/web_2-FSM_gender_stocktake.pdf

- The lack of sex disaggregated data and analysis to inform gender-responsive policy decisions.

In terms of implementation of international human rights conventions, a UN Women review of CEDAW found that FSM was non-compliant on 61 percent of the recognized indicators of legal compliance.¹¹ Similarly, a "Realization of Children's Rights Index" found that FSM was unable to comply with numerous elements of the CRC due to financial, physical and human resource shortfalls. For example, the lack of qualified teacher's means not all children are able to enroll in school and complete their education."¹¹

3. Gender Equality in the FSM

3.1 Introduction

This section provides an overview of the development context in which the project will operate using a gender and social inclusion (GSI) lens. Of particular relevance to the project are the sub-sections on health and nutrition and women's role in agriculture and decision-making.

While social indicators such as life expectancy and education are improving in the FSM, as is access to electricity and clean water, there are still significant GSI barriers. For example, women continue to lack access to political decision-making, have a significantly lower labor force participation than men, and one in four partnered women have recently experienced partner violence.¹² Moreover, there are significant differences in the extent of gender equality and social inclusion in each state as shown in Table 2.¹³

Table 1: Socioeconomic indicators in FSM's four states

Socioeconomic indicator	Chuuk	Kosrae	Pohnpei	Yap	FSM
Male labor force participation (United Nations Convention of the Elimination of all Forms of Discrimination Against Women (CEDAW) 2015)	62.7%	62.9%	70.3%	69.1%	66.1%
Female labor force participation	43.3%	43.6%	49.9%	65.7%	48.4%
% of population aged 25+ who are high school graduates (UN CEDAW 2015)	27.9%	55.3%	35.1%	59.3%	36.2%
Poverty rates (FSM 2013/14 Household Income and Expenditure Survey)	46%	21%	39%	39%	41%
Number of women in legislature or congress (as of May 18)	1	0	1	0	0
% partnered women who experienced partner violence in previous 12 months (FSM Demographic and Health Survey 2014)	42.6%	24.3%	13.5%	15.1%	24.1%
Households with electricity (Castalia Ltd. 2018)	30%	98%	94%	85%	67%

Source: *Climate Change and Disaster Risk Finance Assessment*¹⁴

¹¹ FSM First Voluntary National Review of the Implementation of the 2030 Agenda for Sustainable Development (2019)

¹² Gender-based violence and environment linkages: The violence of inequality. Wen, J. (ed.). Switzerland

¹³ Climate Change and Disaster Risk Finance Assessment, SPC and Pacific Islands Forum Secretariat, 2019

¹⁴ Ibid.

According to the FSM 2013-2014 Household Income and Expenditure Survey (HIES),¹⁵ around 30 percent of households live below the basic poverty line, with trends pointing to an increase in poverty...which particularly affects children and female-headed households.” Households that are headed by women are more likely to live in poverty and on average earn nine percent less than male-headed households.¹⁶

The following chart provides a sense of the proportion of population that struggles with basic needs, with Yap being most affected by substandard conditions.

Table 2: Percentage of population in households (HHs) in defined circumstances

State	% of HHs with no electricity	% of households with no improved sanitation	% of HHs with no improved water sources	% of HHs with poor quality housing	% of HHs with poor cooking fuel	% of HHs with few assets (radio, television, auto, phone, etc.)	% of HHs with no child attending school	% of HHs with no one working
National	17.4	27.1	13.9	22.7	33	25.1	1.6	2.5
Yap	18.5	42.4	1.9	26.4	41.5	30.2	1.4	3.9
Chuuk	38.1	29.0	27.9	24.8	41.1	46.6	4.4	1.4
Pohnpei	9.3	35.9	24.4	26.4	33.7	15.2	0.6	1.0
Kosrae	3.6	1.1	1.3	13.3	15.4	8.4	0.0	3.2

Source: Multidimensional deprivation indicators – HIES 2013-2014

In recognition of growing poverty and hardship, the FSM government has prioritized four targets related to poverty, land tenure, disaster risk management, climate change and directed government spending to essential services in these areas in order to eradicate/ reduce poverty in all its forms. Its targeted goals are:

- Eradicate extreme poverty for all people
- Ensure that all men and women, particularly the vulnerable have equal rights to economic services, access to basic services and ownership and control over land, inheritance and natural resources.
- Build the resilience of the vulnerable and poor and reduce their exposure to climate-related extreme events and other economic social and environmental shocks and disasters.
- Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide means for LDCs to implement programs and policies to end poverty in all its dimensions.¹⁷

In keeping with the commitment to eliminate poverty, the FSM 2020 Voluntary National Report (VNR) recognized how the COVID-19 pandemic has made the need to enhance social protection systems and

¹⁵ FSM 2013-2014 Household Income and Expenditure Survey (HIES)

¹⁶ FSM HIES 2013/14: Main Analysis Report

¹⁷ FSM First Voluntary National Review of the Implementation of the 2030 Agenda for Sustainable Development (2019)

improve delivery of public goods and services evident, “particularly to the poorest and most vulnerable in the Federation.”¹⁸

The FSM government responded rapidly to the pandemic by providing for those whose employment was lost or interrupted as a direct result of COVID-19. By June 2020, the Pandemic Unemployment Assistance (PUA) program was operational and providing support to those most directly affected. Time will tell if women were equitably provided for, given that their employment and daily obligations tend to be undervalued and not tracked.

3.2 Equity in Education

Participation in early childhood education has grown significantly in recent years, from 34 percent in 2005 to 85 percent in 2019, with boys and girls now participating at near equal rates.¹⁹ However, during the final years of secondary school, attendance rates drop significantly, from 80 percent at age 13 to 25 percent for both boys and girls.²⁰

There are a number of factors which affect school enrolment and completion rates, including inadequate facilities, lack of qualified teachers and teaching resources, parental attitudes, lack of employment prospects, even for graduates, and the need to assist with household, subsistence and livelihood duties, including farming. Further, as noted in the 2017 CRC Country Report, the legal age of marriage has not been legislated which could be a factor in young women not completing their secondary education. In addition, children of women who experience violence show higher drop-out rates.²¹

The FSM government has prioritized eight targets to promote life-long learning, the first six of which directly address the need for more gender sensitive and responsive interventions in education. The last two targets could also promote gender equity if a percentage of scholarships targeted female students, especially those pursuing science, technology, engineering and math (STEM) related subjects, including agroforestry, and establishing a quota for qualified female teachers. Identified targets include:

- Ensuring that all boys and girls have access to quality early childhood development, care and pre-primary education;
- Ensuring that all girls and boys complete free, equitable and quality primary and secondary education leading to effective learning;
- Ensuring equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university;
- Ensuring that all youth and substantial portion of adults achieve literacy and numeracy;
- Ensuring learning promotes sustainable development, human rights, gender equality, peace and non-violence and a culture of diversity and sustainability;
- Building and upgrading education facilities that are child, disability and gender sensitive and provide safe-non-violent and inclusive learning environments for all;

¹⁸ Ibid.

¹⁹ FSM First Voluntary National Review of the Implementation of the 2030 Agenda for Sustainable Development (2019)

²⁰ Ibid.

²¹ Ibid.

- Expanding the number of scholarships in higher education for technical, engineering, IT and scientific programs, and
- Increasing the supply of qualified teachers.

The project can assist in achieving these targets by recognizing the prevalence of discrimination and unequal participation of females in technical and vocational education and training (TVET), and by ensuring women and girls are equitably represented in project activities, and are recognized for their unique knowledge and contribution to food production. This will involve identifying “women in agriculture champions”, and acknowledging the men who support them in this role.

3.3 Women in Employment

Economic activities in FSM consist primarily of subsistence farming and fishing, and the economy remains under-developed and heavily dependent on the public sector.

Overall, the number of women who earn wages or salary in FSM is less than half that of men, and men, have higher rates of employment in all fields, including agroforestry.²² For example, 49.1 percent of men in the labor force are skilled agricultural, forestry, and fishery workers, compared to only 18.6 percent of women.²³ Further, in female-led households, nearly 60 percent received no income from agriculture, as opposed to only 48 percent in male-led households.²⁴

According to the FSM Integrated Agriculture Census 2016,²⁵ 51 percent of women were not in the labor force, with most reporting their main activity as “home duties” in keeping with traditional gendered roles. Agricultural production performed by women and girls is generally considered “just part of women’s work.”

Gender inequality in employment exists for a number of reasons, including women’s lack of access to education and training opportunities, alongside cultural beliefs about women’s primary role as homemakers and care-givers to children, the elderly and people with special needs. There are also less income earning opportunities for females than males in the FSM due to hiring preferences in the formal sector, and the difficulties women face in establishing and sustaining micro and small business ventures.²⁶

3.4 Health and Nutrition

The health and welfare of women and children are priorities for the FSM Government as indicated in the National Strategic Development Plan and National Health Policy. Priority outcomes include: reducing the maternal mortality ratio; ending preventable deaths of newborns and children under five; and ensuring universal access to sexual and reproductive health care services.²⁷

According to the FSM National Health Sector Key Performance Indicators & SDG Annual Scorecard, skilled birth attendance is estimated to be at 85 percent. The maternal mortality ratio (MMR) declined significantly from 161/100,000 live births in 2010 to 43/100,000 live births in 2016.²⁸ While the contraceptive prevalence rate is up to 51 percent (in 2017), the growing percentage of youth (24 percent

²² Ibid.

²³ FSM Integrated Agriculture Census 2016

²⁴ FSM Integrated Agriculture Census 2016

²⁵ Ibid.

²⁶ Census 2010, Basic Tables

²⁷ FSM First Voluntary National Review of the Implementation of the 2030 Agenda for Sustainable Development (2019)

²⁸ FSM National Health Sector Key Performance Indicators & SDG Annual Scorecard (2016)

of the population is currently under the age of 15), there is a need to ensure access to sexual reproductive health and family planning services.

Non-communicable diseases (NCDs) are pervasive, and account for more than 70 percent of deaths in the FSM. These “lifestyle” diseases are largely preventable and can be traced to the introduction and increasing prevalence of imported and highly processed foods. Historically, islanders relied, and thrived, on local diets, whereas studies have shown that about 80 percent of the population now consumes less than five (recommended) servings of fruits and vegetables per day. Additionally, 73 percent of the population is overweight and 43 percent are considered obese. Of those overweight, women make up the majority, with about seventy-five percent of women overweight compared to 64 percent of males; and 44 percent of females obese compared to 31 percent of males.

In spite of the majority of the FSM population being overweight, people are not necessarily well nourished. As stated in the 2020 VNR, “Hunger is rare in the nation, malnutrition is the greater issue.” This report goes on to stress the importance of integrated approaches to improving the health of the nation by focusing on: healthy diets, exercise, self-sustaining agricultural practices, and social cohesion.

While the information in the following figure is somewhat outdated, it shows food and non-food costs to meet minimum daily nutrition needs and illustrates why improved agricultural production is essential to the health and well-being of the FSM population.

Figure 3: Daily food needs against national poverty line

In FSM, meeting essential caloric needs requires an average of \$USD 1.84 per adult per day; meeting both food and non-food basic needs requires an average of \$USD 4.34 per day.					
At the national level, the average daily cost of food needed to obtain recommended calories for an adult is \$USD 1.84. The national value denotes the weighted average of food poverty lines in four states.					
Likewise, the total poverty line that includes a non-food allowance of \$USD 4.34 per day at the national level.					
National Poverty line					
	Food Poverty Line (Daily per adult equivalent)	Total Poverty line (Daily per adult equivalent)	Ratio of food to non-food cost in the Total Poverty Line	Food Poverty Line (annual per adult equivalent)	Total Poverty Line (annual per adult equivalent)
National Average	\$1.84	\$4.34	42:58	\$670.60	\$1,583.90

Source: Multidimensional deprivation indicators – HIES 2013-2014

In response to these issues, the FSM government has prioritized the following six targets related to food insecurity, most of which are addressed by the proposed project:

- i. End hunger and ensure access by all people in particular the poor and vulnerable, to safe, nutritious and sufficient food all year round;
- ii. End all forms of malnutrition, and address the nutritional needs of children under five, adolescent girls, pregnant and lactating women, and older persons
- iii. Double the agriculture productivity and incomes of small-scale food producers, through secure and equal access to land, financial services, markets and opportunities for value addition and non-farm employment

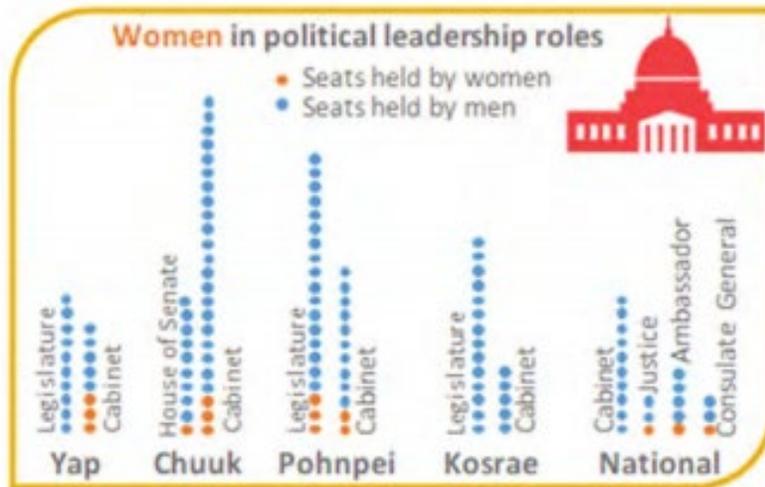
- iv. Ensure sustainable food consumption with agricultural that increase production, maintain ecosystems, strengthen adaptation to climate change and improve soil quality
- v. Maintain genetic diversity of seeds, and
- vi. Increase investment in rural infrastructure.

3.5 Women in Public Life and Decision-Making

Until recently, women in FSM have been totally absent from the legislative and executive levels of government, and continue to be significantly under-represented in civic affairs today. In 2020, there were three women serving as legislators in the Pohnpei State Legislature, and in Chuuk, there were two State female senators.

In the public service, some women have achieved seniority and are able to influence government policies and programs. Statistics show that of all the major formal work sectors (national and state government, private sector and civil society), it is civil society where women actually earn more on average than men.

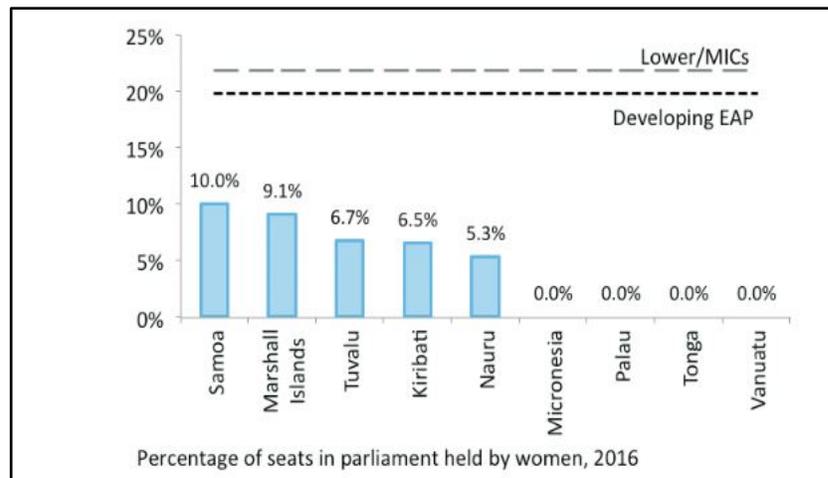
Table 3: Women in Political Leadership Positions in FSM States (2020)



Source: VNR Report, 2020

By way of comparison to other Pacific Island countries, in 2016 FSM was among the Pacific Island Countries (PICS) with the lowest female participation rate at national level.

Table 4: Percentage of Seats in Parliament held by Women in 9 Pacific Countries (2016)



Source: World Bank Gender Statistics database, January 2016

There are no legal barriers to women’s representation in government, but there are significant socio-cultural restrictions. Traditionally, matrilineal societies enable women to actively participate in decision-making processes related to family, community and natural resource matters, but for the speaker of the family is male, usually an uncle or brother.

To overcome, their lack of voice in a formal political setting, in recent decades, Chuukese women created an umbrella organization for all women’s groups on Chuuk, yielding more power to effect change, the Chuuk Women’s Council (CWC)²⁹.

3.6 Violence against Women

In 2014, a National Family Health and Safety Study³⁰ was conducted which revealed a high prevalence of gender-based violence (GBV) in the FSM. This study concluded that the vast majority of women who experienced abuse never went to formal services or authorities, such as health centers or police, for support. GBV counseling, safe houses, and medical treatment can be difficult to access for girls and women in the FSM, particularly in outer islands and in remote areas.

In addition to domestic violence, the FSM also is a site of human trafficking. Responding to the concerns about trafficking, the government issued a national task-force to deal with the situation and offer solutions. The FSM Congress has strengthened prosecutions for human trafficking, although the first successful prosecution was not until 2018.³¹

Recent actions to address violence against women from the 2018 National Women’s Conference and the Pacific Women Program include launching GBV counseling services in different regions, opening safe houses for women, training for police officers on domestic violence and gender issues. The FSM Voluntary National Review cites its next steps in addressing GBV as enhancing coordination between

²⁹ Smith, Sara and Falyn Katzman. [The collective power of women’s organizations in Chuuk, FSM](#), Global Public Health Journal (April 2020)

³⁰http://www.fao.org/fileadmin/user_upload/sap/docs/FSM%20Agriculture%20Policy%20DraftSR2Sept2011.pdf

³¹ FSM First Voluntary National Review of e Implementation of 2030 Agenda for Sustainable Development (2019)

agencies, hiring more social workers, training for service providers, creating a GBV statistics registry, and implementing the Pohnpei Family Safety/Protection and the Kosrae Family Safety Acts.³²

To mitigate the risk of GBV the project will partner with UN-Women's **Ending Violence against Women (EVAW) Programme**: This programme provides stakeholders with access to virtual knowledge platforms, tools and evidence-based resources in order to better equip them with the knowledge and evidence to advocate for strengthened EVAW legislation, improved policies and services for violence against women survivors. Social media tools are also made available to support community mobilization aimed at ending violence against women and girls, through campaigns such as the United Nations Secretary General's UNiTE to EVAW and Say NO-UNiTE³³.

UN-Women has representation in FSM through the UN Joint Presence, which has an office in Pohnpei. FSM falls under the umbrella of UN-Women's Fiji Multi-Country Office (MCO). The MCO covers 14 Pacific Island Countries and Territories (PICTs), working to progress gender equality and women's empowerment in the Pacific through four key programmes:

1. Women's Economic Empowerment;
2. Ending Violence Against Women;
3. Advancing Gender Justice in the Pacific;
4. Increasing Community Resilience through Empowerment of Women to Address Climate Change and Natural Hazards Programme

Expertise from UN-Women, through the UN Joint Presence will take part in consultations and support the integration of their tools and community support services to combat GBV into key activities of this project. Further details are provided in the action plan below.

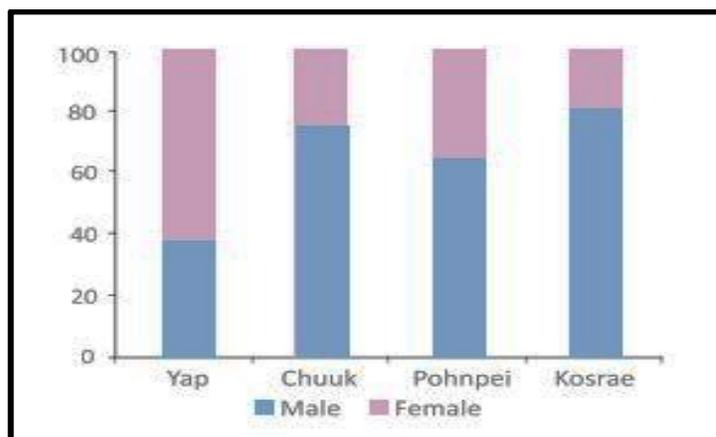
3.7 Women in Agriculture

Agriculture is essential to the way of life in the FSM. Approximately three in five households are engaged in agricultural activities, including forestry and fisheries, as a source of both formal and unpaid employment (subsistence), or in addition to their respective roles in food production. The 2010 Census revealed that 95 percent of FSM households grew crops for consumption, barter, and sale. The upcoming 2020 Census is likely to report similar numbers

³² Ibid.

³³ <https://asiapacific.unwomen.org/en/countries/fiji/co/federated-states-of-micronesia>

Table 5: Number of men and women working in agriculture in FSM by state



Source: FSM State of Environment Report, 2019³⁴

In terms of gendered division of labour in agroforestry, women play a critical role in food production through subsistence farming to feed their families, as well as growing cash crops for income. There are differences between the kinds of crops traditionally grown by women (i.e., swamp taro, purple taro, tapioca) versus what men plant, as well as differences in the location of where women and men farm, with men tending to work on higher ground. This is significant given that the impacts of climate change (i.e., saltwater inundation, flooding and coastal erosion, soil fertility, vegetables, etc.) are most significant in areas planted close to houses, near streams and coastlines.

The role of traditional knowledge is increasingly recognized in playing an essential part in the conservation of biodiversity. Most climate change adaptation and natural resource management strategies now take into account the importance of traditional knowledge, including that held by women, which can be different than knowledge held by men. The four states of FSM have Historical Preservation Offices and there have been numerous studies to record traditional knowledge. The national and state constitutions also respect the importance of traditional knowledge and culture.

There is currently one woman's group in FSM dedicated to farming, the Kosrae Women in Farming. The group is mostly focused on the fisheries sector. On Kosrae women have traditionally been regular providers of seafood for the family, through their regular netting, handlining and reef gleaning activities. Men's contribution was mainly in catching those species that required fishing beyond the reef in boats, or in diving or spearfishing.³⁵

3.8 Women's groups, businesses, and other vulnerable groups

The FSM Department of Health has utilized its relationships with the women groups in the FSM states by setting up coalitions and committees in which women represent the National Government in off-island meetings or conduct the on-island meetings, and take the necessary information out from the National Government into the local communities

³⁴Federated States of Micronesia State of Environment Report (Apia, Samoa : SPREP, 2019) p. 76

³⁵ [Secretariat of the Pacific Community \(SPC\): An assessment of the role of women in fisheries in Kosrae FSM](#)

There are over 100 women's groups across FSM (listed Appendix 3), most of these are represented by umbrella groups that include one from each of the 4 main islands. Detail on each is provided below.

Women's Groups by State

The Pohnpei State Government donated land and building to the Pohnpei Women Council to provide refuge space for victims of domestic violence and human trafficking. Pohnpei State Social Affairs under the Governor's Office also has the position of Women's Interest Officer that works closely with the Pohnpei Women Council (PWC) as well as the other women's groups in the other States. Pohnpei Women Council is the umbrella for all the 29 women's associations of Pohnpei.

The Kosrae State Government donated land and funding for the construction of a day care centre for working mothers in Kosrae. The President of the Kosrae Women Association (KWA) is given an office space at the Governor's Office and gets information out to the local community women as well as from them out to the other states through that same channel.

The Chuuk Women Council (CWC) is also the umbrella organization for all the different women's organizations in Chuuk. CWC runs a centre that provides capacity building skills to promote Chuukese women in leadership and business and offers education on health and gender issues as well as environment, culture and tradition. CWC works closely with the state government to raise awareness, provides services and training for gender-related issues, and acts as the gender development coordinator at the state level.

The Yap State Government has donated space and matching funds for the construction of a multipurpose centre for the Yap Women's Association. Yap's Women's Interest Officer shares a building space with Yap Youth Office. Those two offices liaise between the state government and the local youth and women's groups.

Women Owned Businesses

In 2013, some women business owners in Chuuk State and Pohnpei State mobilized and formed the Women in Business Network (WIBN). Kosrae State and Yap State have been invited to join the network. There are also women members of the States' Chambers of Commerce.

Vulnerable Peoples

This proposal focuses on the residents of the FSM who depend on agriculture for their economic and social well-being. As women carry more of the domestic responsibilities of the home, including responsibility for the health and well-being of their families, this renders them even more vulnerable to the effects of decreased subsistence proteins and higher dependence on a cash economy with which they have limited participation.

The communities most vulnerable to the health effects of climate change in FSM include: populations at risk of being (or that have already been) displaced, for example residents of low-lying atolls or those living close to coasts, rivers and hillsides; women; those at the extremes of age (children and the elderly); those with pre-existing health problems (co-morbid conditions, the disabled); certain occupations (fishermen, farmers, outdoor workers); the poor and socially disadvantaged; and those that lack access to public information broadcasts and communications (e.g. radio) (FSM Department of Health and Social Affairs, 2011).

There are organized People with Disabilities Organizations/Associations in the FSM states that also communicate with the Department on issues dealing with Disability and the Government: two Disabled People's Organization in the States of Pohnpei and Yap, and a Parents of Special Children network in Chuuk. Kosrae State is currently organizing a Disabled People's Organization. Each State has its own youth groups which sometimes come under the umbrella of the State's Youth Council. When they need to communicate at the international level or government's assistance, they go through the National Youth Office.

The project is targeting the placement of community gardens at elementary schools to ensure youth are incorporated into project activities. The schools are a meeting place for the community and are handicap accessible to allow for better inclusion.

Indigenous Peoples

The indigenous people of the FSM are also the political, social, and cultural leaders of the country – the vast majority of the population is comprised of indigenous peoples. The vast majority of the participants in the consultations conducted during the development of this project proposal were individuals indigenous to the islands where the project activities will take place. The few non-indigenous participants were long-term residents employed by organizations involved in climate change adaptation, conservation and related development and livelihoods projects and activities.

3.9 Initiatives for women and partnership opportunities

The National and State Governments have, since 2010, funded biennial conferences on women to mobilize action on issues across the nation and educate policy makers about gender mainstreaming in national and state policy formulation plans. These conferences bring in women from all the four states to discuss emerging issues in environment, health, economy and business, education, government, culture and religion. Themes covered during the conferences are guided by the progress of the states to implement their development goals as well as the United Nations Millennium Development Goals.

Through a 10-year commitment, Pacific Women Shaping Pacific Development (Pacific Women) connects more than 170 gender equality initiatives supported by Australia and implemented by over 160 partners across 14 Pacific Island countries.

Pacific Women is one of the largest global commitments to gender equality. It partners with governments, local and international non-government organisations (NGOs), private sector, disabled people's organisations, coalitions and others to improve the political, economic and social opportunities of Pacific women and to end violence against women and girls. Its emphasis is on partnerships and locally-driven development.

Through Pacific Women, the Australian Government will spend \$1.4 million over 10 years (2012–2022) on initiatives supporting women and girl's empowerment in FSM.

Country Plans are the mechanism through which Pacific Women outcomes and activities are planned and agreed between DFAT and counterpart governments, following extensive document

review and national consultations. They provide detail on what will be funded and how these funding decisions are made.

The first Pacific Women Country Plan for FSM complements existing local activities that contribute to gender equality and women’s empowerment. The Country Plan provides expanded opportunities for women entrepreneurs and supports work that will improve support services to women who have experienced violence.

The program also supports Chuuk Women’s Council to reach marginalised girls in Chuuk through a curriculum focusing on sexual and mental health, healthy relationships and developing future goals. This activity is part of Pacific Girl, Pacific Women's dedicated regional program to support adolescent girls aged 10–19 years.

In addition to Pacific Women, DFAT makes an important contribution to gender equality in FSM through mainstreaming gender outcomes in the aid program, as well as through political, diplomatic and corporate activities.

Table. *Pacific Women Initiatives in FSM (2017-2022)*³⁶

PROJECT NAME AND PARTNER	DESCRIPTION	BUDGET
Outcome: Economic Empowerment		
Pacific Women Growing Business (The Pacific Community (SPC))	Enabled women to start and scale up their businesses by providing business skills and development opportunities, including by partnering with the College of Micronesia for entrepreneurship and business development training and providing mentoring support from a Business Development Counsellor.	\$154,800 (2017–2019)
Outcome: Ending Violence against Women		
Eliminating Violence Against Women Services (Chuuk Women’s Council)	Strengthening services for survivors of gender-based violence and increasing awareness for the prevention of violence against women and children, including opening a crisis centre.	\$481,872 (2019–2022)
Capacity Building Adviser: Gender Based Violence (Consultant)	Providing technical support to pilot the Chuuk Women's Council's gender-based violence primary prevention and psychosocial support services for survivors of violence and strengthening referral pathways, protocols and services for survivors of gender-based violence.	\$376,976 (2019–2022)

³⁶ https://pacificwomen.org/wp-content/uploads/2019/01/FSM-Country-Plan-Summary_Overview-of-all-activities_Aug-2020.pdf

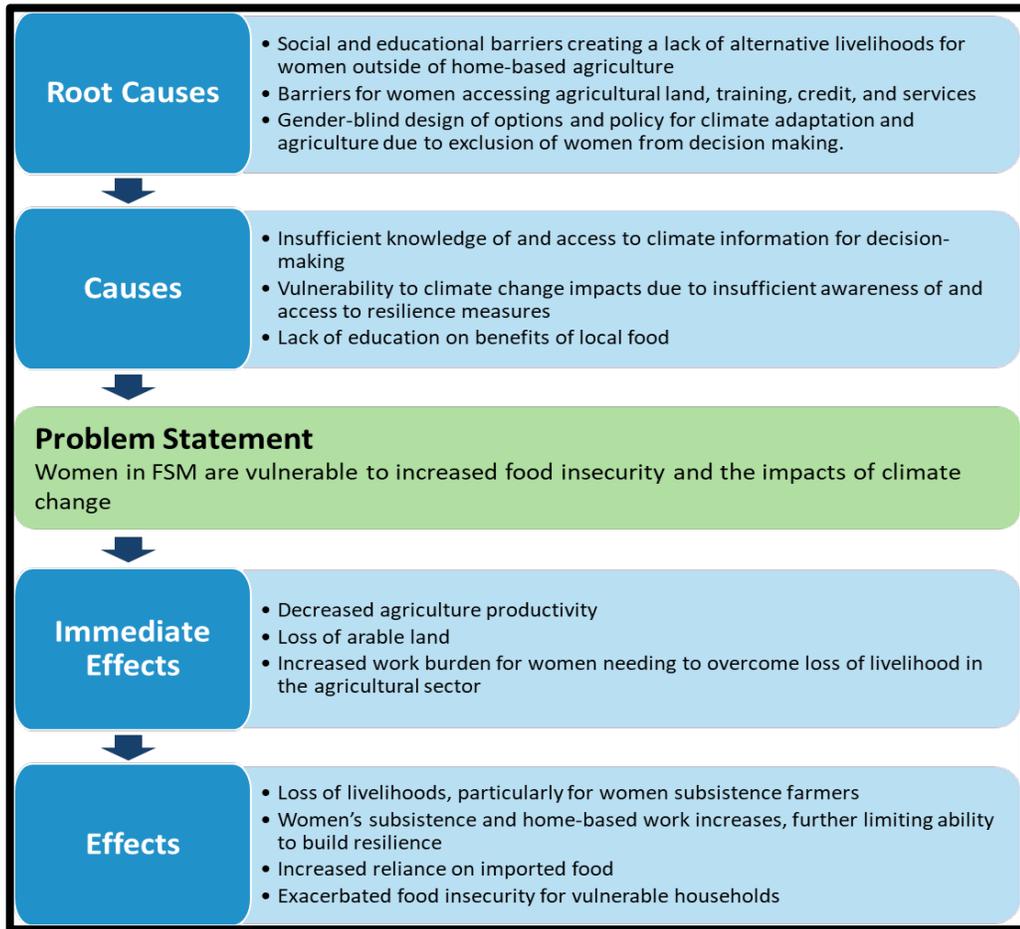
Family Protection Adviser (Government of FSM, Department of Health and Social Affairs)	Providing technical support, training and capacity development to Federated States of Micronesia Government service providers to provide safe and quality essential services to survivors of sexual and family violence.	\$408,398 (2019–2021)
Family Protection Adviser (Government of FSM, Department of Health and Social Affairs)	Worked with FSM government and non-government stakeholders to strengthen referral pathways and services for victims of violence.	\$468,028.00 (2017–2019)
Eliminating Violence against Women in Pohnpei and Chuuk Federated States of Micronesia (Consultant)	Assessed services and gaps in services to end violence against women in Federated States of Micronesia with a focus on Pohnpei State and Chuuk State.	\$88,044 (2017–2018)
Support Pohnpei State’s Women’s Interest Coordinator attending the Regional Training Programme (Government of FSM, Department of Health and Social Affairs; Fiji Women's Crisis Centre)	Supported Pohnpei State’s Women’s Interest Coordinator to attend the Fiji Women's Crisis Centre's Regional Training Programme.	\$12,000 (2019)

Given the extent and reach of these programs, the project will leverage the work done through the *Pacific Women* to ensure women’s groups are involved in project activities and will utilize local expertise to support the mainstreaming of gender throughout the implementation of the project. Several women’s groups across FSM, especially the 4 State-level umbrella groups are well equipped and capacited to support the project and ensure gender is effectively mainstreamed during project implementation. Additional information on their role is included below.

3.10 Problem Tree Analysis

Figure 4 depicts the underlying barriers to food security in the FSM and the impacts on women, families and and communities using gender and climate change lenses.

Figure 4: Problem Tree for Gender, Food Security, and Climate Change in FSM



4. Conclusions and Recommendations

Situational Analysis

The National Strategic Development Plan (SDP) 2004–2023 has a strong focus on improving gender equity and social inclusion in the FSM, and outlines specific strategies for women’s advancement including: improving social protections (to reduce GBV); providing leadership opportunities and training (to give women voice in civic affairs); enhancing outreach programs (to increase women’s knowledge and skills in sustainable livelihoods, climate resilient farming, and health promotion), and by mainstreaming gender-sensitivity and responsiveness throughout government operations. The SDP also stresses the need to expand opportunities and programs for young people (especially those who are out of school and unemployed); strengthen youth organizations, and address the largely unmet socio-economic and political needs of PWD.

The FSM government has also affirmed its commitment to equitable and inclusive development outcomes by endorsing numerous human rights conventions, regional agreements, national policies (women, youth and disability), and by mainstreaming GESI in sector policies and plans, including the National Agriculture Policy. However, despite this strong enabling environment, implementation is seriously constrained by a lack of financial and human resource capacity. Numerous reports have emphasized the need to expand outreach services to remote areas, and to build the knowledge and skills

of government and NGO staff, especially in relation to climate change adaptation and disaster risk reduction.

Research has shown that female-led households are, on average, poorer and more reliant on subsistence farming and imports. There is also evidence of increased violence against women following extreme climate events³⁷ as well as disruption to traditional safety nets. Non-communicable diseases are pervasive in the FSM, due in large part to over-consumption of nutrient-deficient imported food. Climate change is having a serious impact on food crops and affecting medium-long term food security. Further, there is growing recognition that climate change affects women, men, children, the elderly and PWD differently, and that customized adaptation and support strategies are required.

Despite the critical role that women play in food production in the FSM, they often face significant barriers in accessing training, supplies, equipment, credit and other services, and have little representation in decision-making forums.

Agricultural production performed by women and girls is generally considered “just part of women’s house work,” which diminishes their contribution and potential and results in a “gender gap” in agricultural productivity.

*“Ensuring effective farmer’s voice
(including female-farmer voices)
should be the real basis of
agricultural development”.*

World Bank, 2018

Project Response

The project design recognizes that when women are empowered in the agriculture sector, their success leads to more-inclusive growth, better nutrition and health, and less poverty – all of which builds resilience and self-reliance. It also recognizes that interventions in agriculture are more likely to improve nutrition when they target women and promote women’s empowerment, for example, through increasing control over income or improving women’s knowledge and skills. As such, the project will actively engage women in their multiple roles as farmers, paid or unpaid agricultural laborers, agricultural and food processors, traders, entrepreneurs, and employees.

The project design also recognizes the need to redress existing GESI constraints in agriculture, and to draw upon the unique knowledge and skills held by women, particularly with regards to traditional practices for farming and food processing, to effectively adapt agroforestry practices for climate resiliency and food security. Further, the project will seek opportunities to foster the inclusion of young people and those living with disabilities so they better understand the impacts of climate change on food security; become more interested and engaged in CSA, including development of innovative and creative green projects that could generate income.

Working with women, and other vulnerable groups, through agroforestry activities, provides an important opportunity and entry point for addressing cross-cutting equity and inclusion issues such as GBV, under-representation in leadership positions, substance abuse etc. For example, project activities that increase women’s ability to engage in public planning and decision-making processes can have spin-off benefits in other areas of her life, including taking on leadership roles, engaging in entrepreneurship, and not allowing victimization through GBV.

³⁷ <https://www.uncelearn.org/sites/default/files/inventory/unwomen700.pdf>

The project also recognizes that, while agroforestry is essential to livelihoods and subsistence, it is much more than an economic and food producing activity to the women, men and children of the FSM. Agriculture provides the means by which customs and tradition are expressed and maintained, and serves as a channel for individual expression and enterprise within the close confines of the extended family and community. Agricultural products such as yam, sakau, breadfruit and taro are also crucial for ceremonial purposes and for maintaining social capital through gifting.

Opportunities

1. Personnel participating in this project will receive specific gender training and be prepared to carry out the activities and face possible problems and setbacks regarding perceived and tangible inequalities. The gender expert hired for the project will provide initial personnel training.
2. Among the project's trainings for beneficiaries will be workshops on gender roles and work traditionally assigned to each gender within the agriculture sector.
3. In addition, in order to help reduce gender gaps in access to land, work, natural resources, and income, the project will promote the participation of women in all possible activities, with special emphasis on facilitating for them to take part in those that have to do with production (so as to promote their economic empowerment especially through Component 3 of the project).
4. In order for women, their opinions, specific needs and experiences to be taken into account before making decisions, women and men should be asked about them separately.
5. The project will develop strategic alliances with institutions that ensure the rights of women. To begin the project is already partnering with the Gender Development Office (GDO) to ensure of the mainstreaming of gender across project activities. The project will also partner with UN-Women to utilize their ERAW tools to ensure any risks of GBV are properly mitigated prior to project implementation. Other alliances include State-level women's groups As far as possible, it shall map actors and identify local associations – both those that are led by women and those led by both men and women – that can provide an added sustainability to the practices that will be developed within the framework of the project.

Recommendations

As noted in the Funding proposal, climate change and food insecurity affect women and men differently in the FSM, hence different strategies for adaptation and resiliency are required. Given that female-headed households are generally poorer and more reliant on subsistence farming, the project has a specific focus on driving gender-sensitive development for this beneficiary group. The project will also ensure that under-represented and marginalized people are included in planning and reviews processes, and will advocate for their participation in agriculture chain networks, associations and boards.

Given the above context for gender, food security, and climate change in FSM, the following recommendations are provided to help ensure effective gender outcomes in implementing this project:

- Baseline data disaggregated by gender for considerations like access to credit, extension, and training is limited at the moment, so this project has a critical role to play in collecting this information through its stakeholder engagement and coordination with other past projects. Establishing more effective baselines for gender inequality in agriculture and food security will help to better target interventions going forward and support the sustainability of gender-balanced results.

- Women can provide critical inputs to effectively tailoring and applying climate resilient techniques and crop varieties to local community contexts, so it is critical for the project to empower women to contribute their skills and knowledge through direct consultation and forums to ensure their knowledge can be successfully integrated.
- Both the ability to access information and the ways in which information is accessed are likely to be different for women (i.e. access to mobile communication), so in designing dissemination systems for climate information as well as climate resilient agriculture practices, the project will need to ensure that women have an equal pathway to utilizing the available information.
- Similarly, with market access, women are likely to have additional barriers to capitalizing on new markets and opportunities for diversified and improved livelihoods (i.e. transportation, social barriers, etc.) and the project will need to ensure that it is providing focused support to addressing these barriers in the design of its market activities
- There is a critical need to engage both formal and informal women’s organizations to build awareness and create buy-in for addressing the issue of climate change in agriculture
- Given the existing issues representation in decision-making both at the government and household/community level, the project will need to proactively work to ensure the full participation of women in decision-making, particularly with regards to program/intervention design

It is further recommended that project design and implementation incorporate the following gender-responsive objectives and actions. Further detail regarding targets, indicators, timelines, responsibility and budget are included in the Action Matrix contained in Section 5.

Impact Statement:

To increase the resilience of women and other vulnerable groups in the FSM by improving food security in the face of climate change.

Outcome 1: Establish an enabling environment for adaptive action and investment

- i. Strengthen representation of women in institutional decision-making and coordination
- ii. Ensure gender-responsive and -inclusive agriculture and climate change policy
- iii. Ensure gender-balanced representation in the establishment and ongoing management of State-level farmer’s associations
- iv. Ensure gender-responsive and gender-balanced capacity building and training
- v. Ensure weather and climate information is equitably available and accessible for both women and men in household decision-making

Outcome 2: Enhance the food security of vulnerable households by introducing climate-smart agriculture practices

- i. Leverage both men and women farmers knowledge of inputs and production systems to better develop CSA practices and seeds

- ii. Ensure equal access to demonstration gardens and seed banks and nurseries for men and women
- iii. Ensure gender-balanced representation in management committees for seed banks, and nurseries
- iv. Ensure support services are trained to meet the differentiated needs of men and women farmers
- v. Ensure effective ownership of the issue of CSA for both men and women farmers
- vi. Ensure gender-balanced capacity building, awareness building, and training

Outcome 3: Strengthened climate-resilient value-chains and market linkages across agriculture sector

- i. Ensure market development effectively takes into account differentiated access and availability for men and women farmers, particularly with regards to social barriers for access
- ii. Empower communities, particularly through women’s groups to promote local consumption of food
- iii. Ensure food processing and preservation techniques are reflective of time, capacity, and technological constraints of household farmers particularly for women

Benefits to women of project

- (a) Increasing women’s leadership and decision making in the agriculture sector

This project through its focus on female headed households, its emphasis on ensuring women are part of the project leadership, and its commitment to cultivating women’s leadership in running and managing State-level farmer’s associations **will contribute to increasing women’s leadership and decision making in the agriculture sector.**

- (b) Increasing economic opportunities for women

The project will actively contribute to increased economic opportunities for women, particularly through Outcome 3: Strengthened climate-resilient value-chains and market linkages across agriculture sector. Specific business models will be developed to expand current women owned businesses ability to sell or buy agriculture goods. In addition, women trained with food processing techniques will be able to sell their goods in local farmer’s markets that will be established through the project. These activities will allow the project **to contribute to increasing economic opportunities for women and increasing their current livelihoods.**

- (c) Reducing violence against women

While the project is not actively targeting GBV, the project will proactively utilize UN-Women’s [Guide to Support the Implementation of the Global Women’s Safety Framework](#) to integrate into personnel onboarding for the project as well as through the development of specific training modules to include for agriculture extension agents. Training will include, raising awareness of personnel and consultant on the topic, presenting strategies to prevent sexual harassment, familiarizing staff/consultants with equal opportunity policies, and detailing grievance mechanism

procedures and how women's safety is considered in procurement or recruitment processes. Through the explicit integration and partnership with UN-Women the project **will contribute to a better understanding of violence against women and equip personnel working on the project with ways to reduce GBV.**

Implementation of GAP

As mentioned above, the project will partner with UN-Women through the UN Joint Presence office in Pohnpei to integrate UN-Women's **Ending Violence against Women (EVAW) Programme**. The project will also partner closely with FSM's GDO. The GDO will dedicate a full time staff member to the project implementation and will take the lead in conducting trainings, review materials to ensure gender mainstreaming, and liaise with State-level gender officers to participate in State-level workshops, trainings etc. The GDO will be supported by the Project Management Unit (PMU), which will be responsible for ensuring the GAP is implemented and will report to the Project Steering Committee (PSC) on progress made. The project will also be supported by a gender expert, who will provide support on a part-time basis.

Finally, the project will work directly with the 4 State umbrella woman's groups to ensure women's groups and women owned businesses are consulted and incorporated into all relevant activities. A focal point for each State-level woman's group will be assigned to the project for the full duration of the project. See GAP below for further details.

Access for Women to Grievance Mechanism

The project grievance mechanism is outlined in Annex 12 ESAP. To ensure that women have equal access to the grievance mechanism the project will undertake the following:

1. Provide all female beneficiaries (farmers, households, women's groups) with a clear process for providing comment and raising grievances;
2. Disseminate grievance mechanism avenues through trusted female leaders (teachers, heads of NGOs, heads of women's groups) to all 140 local communities targeted
3. Ensure women have the opportunity to raise comments/concerns anonymously through the establishment of focal points for the project within the 4 State-level umbrella women's groups

5. Gender Action Plan

During the first 6 months of project implementation the project will convene a stakeholder consultation led by the GDO and recruited gender expert for the project. The stakeholder consultation will include women leaders, key women’s groups including the Kosrae Women in Farming and Chuuk Women’s Council (CWC), and researchers. Based on the consultations as well as additional research on baselines the GAP will be verified and adjusted during the first year of implementation.

Objective	Action/Activity	Baseline and Targets	Timeline & Responsibility	Budget
Impact Statement: <i>To increase the resilience of women and other vulnerable groups in the FSM by improving food security in the face of climate change</i>				
Outcome 1: Establish an enabling environment for adaptive action and investment				
<u>Strengthened representation for women in institutional decision-making and coordination</u> <i>(Output 1.1)</i>	<ul style="list-style-type: none"> Consult with women leaders, researchers, and organizations to facilitate inclusion into agricultural policy development Recruit women champions and empower them to serve in the national coordinating mechanism 	<ul style="list-style-type: none"> Baseline: 0 consultations held to facilitate inclusion into agricultural policy development Target: 1 consultation held each year to facilitate inclusion into agricultural policy Baseline: 0 men and 0 women involved in coordination mechanism Target: 5 men and 5 women involved in coordination mechanism 	Years 1-5 PMU Gender expert (10 days) GDO State Umbrella Gender Groups ³⁸	5,000 for additional year 1 consultation (Annual consultations will be included as part of the budget of ongoing consultations under output 1.1)
<u>Ensure gender responsive and</u>	<ul style="list-style-type: none"> Training curriculum for climate risk in the agricultural sector includes the 	<ul style="list-style-type: none"> Baseline: 0 training curricula mainstreaming gender 	Year 1 PMU GDO	Support from Gender

³⁸ Chuuk Women Council; Kosrae Women Association; Pohnpei Women Council; Yap Women Association

Objective	Action/Activity	Baseline and Targets	Timeline & Responsibility	Budget
<u>inclusive agriculture and climate change policy</u> <i>(Output 1.3)</i>	differentiated vulnerabilities of men and women to climate change and food insecurity <ul style="list-style-type: none"> • Training on GBV for all officials, staff and consultants involved in project 	Target: 1 training curriculum mainstreaming gender <ul style="list-style-type: none"> • Baseline: 0 officials, staff and consultants trained on GBV Target: 40 officials, staff and consultants trained Women: 20 Men: 20	UN Joint Presence ³⁹	Development Office
<u>Ensure gender-balanced representation in the establishment and ongoing management of State-level Farmer's Association</u> <i>(Output 1.4)</i>	<ul style="list-style-type: none"> • Recruit local women to serve as part of association committees and management 	Baseline: 0 local women serve as part of State-level association management committees Target: 8 local women serve as part of State-level associations management committees Women: 8 Men: 8	Years 1-3, PMU Gender expert (20 days) GDO State Umbrella Gender Groups	USD 7,000 (part of establishment of State-level association and gender consultant expertise)
<u>Ensure gender-responsive and gender-balanced capacity building and training</u>	<ul style="list-style-type: none"> • Ensure men and women leaders recruited for State-level agriculture associations are trained on gender mainstreaming and GBV 	Baseline: 0 men and women leaders recruited for State-level agriculture associations are trained on gender mainstreaming and GBV	Year 1 PMU Gender expert (10 days)	USD 5,000 (part of training budget gender consultant expertise)

³⁹ Representing UN-Women in FSM

Objective	Action/Activity	Baseline and Targets	Timeline & Responsibility	Budget
<i>(Outputs 1.3, 1.4, 1.5)</i>		Target: 40 men and women leaders recruited for State-level agriculture associations are trained on gender mainstreaming and GBV Women: 20 Men: 20	UN Joint Presence	
<u>Ensure weather and climate information is equitably available and accessible for both women and men in household decision-making</u> <i>(Output 1.5)</i>	<ul style="list-style-type: none"> Dissemination of information is targeted to both female and male farmers 	Baseline: 1000 HHs receiving updated accessible information Women-headed HHs: 200 Target: 15,767 HHs receiving updated accessible information ⁴⁰ Women-headed HHs: 3,153 Tailor the climate information and translate in local language. Disseminate the climate information products via appropriate communication channels with consideration of the gender dimension.	Years 3-5 PMU GDO State Umbrella Gender Groups DECEM	No additional budget

⁴⁰ This is total number of HHs targeted for the project; 20% of target are female headed HHs

Objective	Action/Activity	Baseline and Targets	Timeline & Responsibility	Budget
Outcome 2: Enhance the food security of vulnerable households by introducing climate-smart agriculture practices				
<u>Leverage both men and women farmers knowledge of inputs and production systems to better develop CSA practices and seeds</u> <i>(Output 2.1)</i>	<ul style="list-style-type: none"> Consult with men and women farmers to develop package of CSA practices 	Baseline: 0 consultations on CSA agriculture practices Target: 40 consultations on CSA practices Women: 20 Men: 20 (target at least 10 per Sate; 40 total;)	Year 2 PMU COM-FSM GDO	No additional budget
<u>Promote and establish traditional and climate resilient agroforestry systems appropriate for different island systems and to the climate conditions being faced for both women and men</u> <i>(Output 2.1)</i>	<ul style="list-style-type: none"> Number of female and male farmers leveraging CSA packages (including number and type of climate resilient seed varieties, technologies, and practices) 	Baseline: 3,412 farmers leveraging CSA packages Women: 682 Men: 2,730 Target: 61,425 famers utilizing CSA techniques (90% of target population) Women: 18,428(30% of farmers are women) Men: 42,997 _____ Provide technical assistance for the adoption of the integrated packages of CSA	Year 4, 5 PMU COM-FSM GDO	No additional budget
<u>Ensure equal access to demonstration gardens</u>	<ul style="list-style-type: none"> Demonstration gardens developed at elementary schools to provide access 	Baseline: 0 demonstration gardens at elementary schools	Years 2-5 PMU COM-FSM	No additional budget

Objective	Action/Activity	Baseline and Targets	Timeline & Responsibility	Budget
<u>and seed banks and nurseries for men and women</u> <i>(Outputs 2.1, 2.5)</i>	to women, youth, and other community members	Target: 140 demonstration gardens established	State Umbrella Gender Groups	
<u>Ensure support services are trained to meet the differentiated needs of men and women farmers</u> <i>(Output 2.3)</i>	<ul style="list-style-type: none"> All extension agents are trained to meet the differentiated needs of men and women farmers 	Baseline: 0 extension agents trained to meet the differentiated needs of men and women farmers Target: 12 extension agents are trained to meet the differentiated needs of men and women farmers	Years 2-5 PMU GDO	USD 5,000 (part of training budget)
<u>Ensure effective ownership of the issue of CSA for both men and women farmers</u> <i>(Outputs 2.1, 2.4)</i>	<ul style="list-style-type: none"> Establish women-led nurseries and seed banks 	Baseline: 3 nurseries currently established Women-led: 0 Male-led: 3 Target: 16 nurseries and seed banks established (4 per State) Women-led: 8 Men-led: 8	Years 3-5, PMU COM-FSM State Umbrella Gender Groups	No additional budget
<u>Ensure gender-balanced capacity building, awareness building, and training</u> <i>(Outputs 2.1, 2.2 2.3, 2.4 2.5)</i>	<ul style="list-style-type: none"> Ensure gender-balanced representation in project trainings on use of CSA practices and nursery management 	Baseline: 0 persons trained on use of CSA practices and nursery management Target: 2000 trained on use of CSA practices and nursery management Women: 1000 Men: 1000	Years 2-5 PMU State Umbrella Gender Groups GDO	USD 10,000 (part of training budget)

Objective	Action/Activity	Baseline and Targets	Timeline & Responsibility	Budget
Outcome 3: Strengthened climate-resilient value-chains and market linkages across agriculture sector				
<u>Ensure market development effectively takes into account differentiated access and availability for men and women farmers, particularly with regards to social barriers for access</u> <i>(Output 3.1)</i>	<ul style="list-style-type: none"> Participation of men and women in local agriculture markets Increased income from men and women farmers 	<ul style="list-style-type: none"> Baseline: 13,600 farmer's participating in local agriculture markets Women: 2,700 Men: 10,880 Target: 47,250 (70% of targeted farmers participating) Women: 14,175 Men: 33,075 Baseline: to be established in year 1 of project Target: 5-10% income increase from baseline for women and men farmers 	Years 3-5 PMU COM-FSM State Umbrella Gender Groups GDO	USD 5,000 (part of consultancy budget)
<u>Empower communities, particularly through women's groups to promote local consumption of food</u> <i>(Outputs 3.1, 3.2 3.3)</i>	<ul style="list-style-type: none"> Provide trainings and outreach to local community groups and households 	Baseline: 0 men and women trained on consumption of local foods Target 500 men and women trained on consumption of local food Women: 250 Men: 250	Years 3-5 PMU State Umbrella Gender Groups GDO	No additional budget
			Total	USD 32,000

Appendix 1: 2019-2020 Stakeholder Lists

Chuuk State FAP Workshop Attendance

	Name	Title	Organization	Email	28- Oct	29- Oct	31- Oct
1	Kantito Kanas	Chief	Chuuk AG	kanaskantito@yahoo.com >	X	X	X
2	Joakim Wassan	Technician	Chuuk AG	Joakim Wassan	X	X	
3	Brad Mori	Deputy Directo	Chuuk EPA	brad_mori@hotmail.com >	X	X	X
4	Marcellus Akapito	Executive Director	CCS	markapito@gmail.com	X	X	X
5	Clarice Graham	Finance Officer	CCS	clarice.etop@gmail.com	X	X	
6	Curtis Graham	Director	DMR	abcpenia@gmail.com >	X	X	X
7	Maryrose Nakayama	Project Manager	CWC	nakayama.cwc@gmail.com	X	X	
8	Wisney Nakayam	Member of Chuuk State Legislator	Government	wisneynakayama@gmail.com >	X		
9	Snyther Biza	GIS officer	FSM DECEM	sbiza78@gmail.com	X	X	
10	Marlyter Silbanuz	PM	FSM R&D	mslbanuz@fsmrd.fm	X	X	
11	Roseo Marquez	MC/Grants Officer	MCT	sgo@ourmicroneisa.org	X	X	X
12	Tamara Greenstone-Alefaio	Conservation Program Manager	MCT	conservation@ourmicronesia.org	X	X	
13	Beverly Fred	Chuuk State PAN Coordinator	DMR	fanesu03@gmail.com	X		X
14	Roseo Marquez	MC/Grants Officer	MCT	sgo@ourmicroneisa.org	X	X	
15	Justin Fritz	Chuuk C4Life Coordinator	MCT	fritzjustin5@gmail.com	X	X	X
16	Kris Kanemeto	Chuuk State Ridge to Reef Coordinator	DMR	krizk66@gmail.com		X	
17	Tamara Greenstone-Alefaio	Conservation Program Manager	MCT	conservation@ourmicronesia.org	X	X	X

18	Boyd Mackenzie	Chuuk State Weather Service	NOAA	boyd.mackenzie@noaa.gov	x	x		
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Kosrae State FAP Workshop Attendance

	Name	Title	Organization	Email	10-Dec	11-Dec	12-Dec	13-Dec
1	Blair Charley	KIRMA	Director	charleyblair@gmail.com	x	x	x	x
2	Marlyter Silbanuz	PM	FSM R&D	mslbanuz@fsmrd.fm	x	x	x	x
3	Roseo Marquez	MC/Grants Officer	MCT	sgo@ourmicroneisa.org	x	x	x	x
4	Tamara Greenstone-Alefaio	Conservation Program Manager	MCT	conservation@ourmicroneisia.org	x	x	x	x
5	Snyther Biza	GIS officer	FSM DECEM	sbiza78@gmail.com	x	x	x	x
6	Faith Siba	FSM IWR R2R Project Manager	DECEM/KCSO	faithsiba@gmail.com	x	x	x	x
7	Maxson Nithian	State Forester	Kosrae	kosraeforestry@gmail.com	x			
8	Hiroki Tanaka	Environmental Educator	KIRMA	hiroki.tanaka031220@gmail.com	x	x	x	x
9	Iliziva Lonno	Assistant Forester	KIRMA	ilizivamyfred@gmail.com	x	x	x	
10	Onniel Nena	Environmental Educator	KCSO	onnena12@gmail.com	x	x	x	
11	Likiak Melander	Administrator	DT&I	likiakmelander@gmail.com	x			
12	Erica Waguk	Education Assistant	KIRMA	erwagugga@gmail.com	x	x	x	x
13	Sam Isaac	Fisheries	DREA	sam.isac00@gmail.com	x	x		
14	Larry Alik	UBR		-	x	x		
15	Marston Luckymis	R2R Project Coordinator	KIRMA	mluckymis@gmail.com	x		x	x
16	Leonard Sigrah	IS Coordinator	KIRMA	lsigrah2016@gmail.com	x	x	x	x
17	Gibson Jone		KUB	gibio5013@gmail.com	x	x	x	
18	Julie Kun		KUB	julie.nuk@hotmail.com	x	x		
19	Austin Albert	Archaeological Survey Aid	KHPO/KIRMA	siklava@gmail.com	x	x	x	
20	Kenye Livae	President	WIFK	klivae@hotmail.com	x	x	x	x

21	Swenson Thomson	Archaeological Survey Aid	KHPO/KIRMA	swanthom@gmail.com	x			
22	Ezekiel Nena	Agriculture Extension	DREA	eislander622@yahoo.com	x		x	
23	Jason Livae	Member	UMG	-				

Yap State FAP Workshop Attendance

	Name	Title	Organization	Email	
1	Francis Ruegorong	Tech	DAF	ydafwildlife@gmail.com	x
2	Marlyter Silbanuz	PM	FSM R&D	mslbanuz@fsmrd.fm	x
3	Valentino Orhaitil	Technician	DAF	yapucf@gmail.com	x
4	Christina Fillmed	Executive Director	Yap EPA	epayap@mail.fm	x
5	Martina Fichog	Nursery	DAF		x
6	Raphaela Tinngin	Coordinator of Volunteers	DAF	raphaelatinngin@gmail.com	x
7	Tamdad Sulog	Chief	DAF	agricultureyap@mail.fm	x
8	Cyril Yinnifel	member	COP	cyinnifel@gmail.com	x
9	Snyther Biza	GIS officer	FSM DECEM	sbiza78@gmail.com	x
10	Michelle Chugen	Grant Manager	YSHPO	mchugen@yapstategov.org	x
11	Antonia R. Defan	Grant Accountant	DAF	aruerus@yahoo.com	x
12	Ernie Y Guswel	Invasive Tehnician	DAF		x
13	Berna Gorong	Conservation Planner	TNC	berna.gorong@tnc.org	x
14	Roseo Marquez	MC/Grants Officer	MCT	sgo@ourmicroneisa.org	x
15	Liz Terk	Director of Conservation Science and Planning	TNC	eterk@tnc.org	x
16	Rachael Nash	Independent contractor		nash.rachael@gmail.com	x
17	Tamara Greenstone-Alefaio	Conservation Program Manager	MCT	conservation@ourmicronesia.org	x
18	Andrew Yinnifel	Invasive Species Spray Tech	DAF		x
19	Joseph Tutuw	Invasive Species Tech	DAF		x
20	Pius Liyagel	Forestry	DAF		x
21	Ezekial Kefathlee	Coordinator-Watershed	TRCT	ekenfathlee@gmail.com	
22	Debra Laan	State Coordinator	R2R	debra.laan@gmail.com	
23	Barth Yarofaishie	Nursery tech	DAF	barthyarofaishi@gmail.com	
24	Sabino Sauchomal	Executive Director	Yap CAP	yapcap@mail.fm	

Pohnpei FAP Workshop

Date

	Name	Title	Organization	Email	8-Jan	9- Ja n	10- Ja n
1	Regina Moya Santiago	Assistant Coordinator	U&CF	xiexanmoya@gmail.com	x		
2	Joab	Project Manager	MCT Cooperative	livihoods@ourmilivelihoods.org	x	x	x
3	Jackson Phillip	CRE-COM FSM- Coordinator	Research Extension	jphillip1127@gmail.com	x		x
4	Kanio Torres Bryan	Agriculture Agent	FSM CRE-COM-	kaniotorres95@gmail.com	x	x	x
5	Wichep Francisca	Agriculture Agent Terrestrial Program	FSM	bw.pnicre@gmail.com	x	x	x
6	Obispo	Manager	CSP	fransohl@gmail.com	x	x	x
7	Mark Kostka	Chief of Agriculture	R&D Pohnpei Pingelap	mkostka1771@gmail.com	x	x	x
8	Smithy Clark	Mayor of Pingelap	Government COM Land	ail.com	x	x	x
9	Engly Ioanis Konrad	Administrative Assistant	Grant program	microneisa.fsm@yahoo.com	x	x	
10	Englberger Tobias	consultant	self CRE-COM-	ppmicroneisa@mailil.fm	x	x	x
11	Tamerlan Eugene	Extension Agent CRE	FSM	tobias@comfsm.fm	x	x	x
12	Eperiam Pelson	State Forester	NRM	eeperiam@yahoo.com	x	x	x
13	Moses	Specialist	OFA	ofa.state.gov@gmail.com	x		
14	Clay Hedson Winfred	fisheries specialist	OFA	ail.com	x		
15	Mudong	SEM Coordinator	MCT	winfredmudong@gmail.com	x		
16	Jorg Anson	Coordinator Director, Conservation Science and Planning Environment	EPA-R2R	jorgyanson@gmail.com	x		
17	Liz Terk	Specialist	TNC	eterk@tnc.org	x		
18	Brad Soram Stephen	Senior Policy and Finance Advisor	EPA USAID	bradsoram@gmail.com	x	x	x
19	Boland	Finance Advisor	Climate Ready	sboland@pacificclimate.org	x		
				mateready.org	x		

20	Patterson Shed	Regional Coordinator	USAID Climate Ready	<a href="mailto:pshed@pacificclim
ateready.org">pshed@pacificclim ateready.org sbiza75@gmail.co	x		
21	Snyther Biza Saimon	GIS	FSM Decem	<a href="mailto:m
saimonlihpai@roc">m saimonlihpai@roc	x	x	
22	Lihpai Marlyter	PNI NRM Chief	FSM Decem	<a href="mailto:ketmail.com
marlyterpohnpei">ketmail.com marlyterpohnpei	x		x
23	Silbanuz Tamara		FSM R&D	@gmail.com	x		x
24	Greenstone- Alefaio	MCT Conservation Program Manager	MCT	<a href="mailto:conservation@our
micronesia.org">conservation@our micronesia.org sgo@ourmicronesi	x	x	x
25	Roseo Marquez	MCT MC	MCT	<a href="mailto:a.org
director@ourmicr">a.org director@ourmicr	x	x	x
26	Willian Kostka	Exectutive Director	MCT	<a href="mailto:onesia.org
pnistatepan@gmai">onesia.org pnistatepan@gmai	x		x
27	Douglas Kusto	R&D PAN	PAN	<a href="mailto:l.com
alanberts84@gmai">l.com alanberts84@gmai	x	x	x
28	Rosaleen Alanzo	Secretary MMG	MMG	l.com	x		x
29	Welbert Perez	MMG Police	MMG		x	x	x
30	Lucille Apis- Overhoff	Volunteer independent		<a href="mailto:lu.overhoff@gmail
.co">lu.overhoff@gmail .co nash.rachael@gm	x	x	x
31	Rachael Nash Marciano	contractor	self	<a href="mailto:ail.com
ramsimar18@gma">ail.com ramsimar18@gma	x	x	x
32	Imar	FSM SAPS?	FSM R&D	<a href="mailto:il.com
justinlemuel415@">il.com justinlemuel415@		x	x
33	Justin Lemuel Senard		CSP	gmail.com		x	x
34	Leopold Rodasio	Mayor Conservation	Nukuoro	rodasio.samuel@u		x	x
35	Samuel Angel	Director	USDA NRCS	<a href="mailto:sda.gov
angejonathan@g">sda.gov angejonathan@g		x	x
36	Jonathan Eugene	educator	CSP	<a href="mailto:mail.com
eujoseph925@gm">mail.com eujoseph925@gm		x	x
37	Joseph Gyrone	Director	CSP	ail.com		x	x
38	Samuel	Agriculture Agent II	CRE-COM- FSM	<a href="mailto:gs.pnicre@gmail.c
om">gs.pnicre@gmail.c om bejayobispo81@g		x	
39	Bejay Obispo	Terrestrial	CSP	mail.com		x	
40	Kohsak Keller	Extension Agent CRE	CRE-COM- FSM	<a href="mailto:kjr.pnicre@gmail.c
om">kjr.pnicre@gmail.c om			x

Appendix 3: List of Women's Groups in FSM

Pohnpei State listing for the women's organizations:

- Lien Madolenihmw (PMLM)
- Lien Mand Women in Action
- DSOW(Development Skills of Women)
- OBC (Otohi Birthday Cluh)
- UCWA(U Council of Women in Action)
- Mwohdenleng
- Mothers and Daughters
- Lien Mercedes en Pohnpei
- Lien Alem en Pohnpei
- EMPWA (Enipein Marine Park Women Association)
- Lien Kitti (Municipal)
- Lien Onohnleng (Municipal)
- Lien Pikeniap Sokehs (Municipal)
- Lien Nanwel (Municipal)
- Lien Palikir (Municipal)
- Lien Nanpil (Municipal)
- TSP(Takaieu, Seinwar, Paliais)
- Lien Nanpil (Municipal)
- Lien Education
- Lien Kempahn Roson Mwahu
- Pohnpei Ladies Club
- Lien Kolonia Town
- Lien Pingelap
- Lielehle Pohnsapw
- Lien Pounhpei Tikpeieng
- Lihn Mwokilloa
- Lien nan Rohi Pehleng
- Lien Kapingamarangi
- Lien Pwihn #4 en Wein U
- Lien Senyapein

Chuuk State listing for the women's organizations:

- Weno Chuuk Nursing
- Fin Penia
SPC
TTF
- Nien Fairotiw
- Saponong Ministry
- LMC
- TTF
- Tunnuk Yout
- Club 20 Women
- Holy Family Women

- Fin Piis Paneu
- Nama Women Association
- UNA
- A&D
- Kinamwe patapat
- UFO
- Nai me pwi
- Siis fonuengin
- Fin Eni
- 10 PP
- Fin Nepwon
- Fanip Women
- Ieei Romanum
- Aroset Base W. Association
- Nien Tirow
- Wonei Women's Freestyle
- Li Ew's Fin Fonoton
- Fin Naka
- Uman Sapota Handicraft
- PYCA
- Fin Parem
- Ephrata Church Finanisi
- Fin Pwene Malaio
- Nisengitam Assoc.
- Nien Foup
- Udot Nukunufou
- Lien Fana
- Niekewe Wichap
- Fin Sapore
- Oneisomw Women Assoc.
- Saponong Women Association

Kosrae State listing for the women's organizations:

- Walung Women Organization (Municipal)
- Utwe Women Org. (Municipal)
- Malem Women Org. (Municipal)
- Lelu Women Org. (Municipal)
- Kosrae Women in Farming
- Walung Women Christian Association
- Utwe Women Christian Association
- Malem Women Christian Association
- Lelu Women Christian Association
- Tafunsak Women Christian Association
- Filipina Association - Kosrae
- Kosrae Handicraft Club
- Kosrae Seventh Day Adventist Women Mission

Yap State listing for the women's organizations:

- Tamil Women Association
- Neighboring Islands Women Association
- Dulkan Women Group
- Okaw Women Association
- Tenfar Community Group
- Kaday Women Association
- Ngolog Women's Group
- Yap Women's Ministry
- Luwech Women Group
- Lingir Women's Group
