AFB/PPRC.21/19
26 September 2017

Adaptation Fund Board
Project and Programme Review Committee
Twenty-First Meeting
Bonn, Germany, 10-11 October 2017

Agenda Item 6 o)

PROPOSAL FOR COOK ISLANDS

Background

1. The Operational Policies and Guidelines (OPG) for Parties to Access Resources from the Adaptation Fund (the Fund), adopted by the Adaptation Fund Board (the Board), state in paragraph 45 that regular adaptation project and programme proposals, i.e. those that request funding exceeding US$ 1 million, would undergo either a one-step, or a two-step approval process. In case of the one-step process, the proponent would directly submit a fully-developed project proposal. In the two-step process, the proponent would first submit a brief project concept, which would be reviewed by the Project and Programme Review Committee (PPRC) and would have to receive the endorsement of the Board. In the second step, the fully-developed project/programme document would be reviewed by the PPRC, and would ultimately require the Board's approval.

2. The Templates approved by the Board (Annex 5 of the OPG, as amended in March 2016) do not include a separate template for project and programme concepts but provide that these are to be submitted using the project and programme proposal template. The section on Adaptation Fund Project Review Criteria states:

> *For regular projects using the two-step approval process, only the first four criteria will be applied when reviewing the 1st step for regular project concept. In addition, the information provided in the 1st step approval process with respect to the review criteria for the regular project concept could be less detailed than the information in the request for approval template submitted at the 2nd step approval process. Furthermore, a final project document is required for regular projects for the 2nd step approval, in addition to the approval template.*

3. The first four criteria mentioned above are:
   (i) Country Eligibility,
   (ii) Project Eligibility,
   (iii) Resource Availability, and
   (iv) Eligibility of NIE/MIE.

4. The fifth criterion, applied when reviewing a fully-developed project document, is:
   (v) Implementation Arrangements.

5. It is worth noting that since the twenty-second Board meeting, the Environmental and Social (E&S) Policy of the Fund was approved and since the twenty-seventh Board meeting, the Gender Policy (GP) of the Fund was also approved. Consequently, compliance with both the ESP and the GP has been included in the review criteria both for concept documents and fully-developed project documents. The proposals template was revised as well, to include sections requesting demonstration of compliance of the project/programme with the ESP and the GP.

6. In its seventeenth meeting, the Board decided (Decision B.17/7) to approve "Instructions for preparing a request for project or programme funding from the Adaptation Fund", contained in the Annex to document AFB/PPRC.8/4, which further outlines applicable review criteria for both concepts and fully-developed proposals. The latest version of this document was launched in conjunction with the revision of the Operational Policies and Guidelines in November 2013.

7. Based on the Board Decision B.9/2, the first call for project and programme proposals was issued and an invitation letter to eligible Parties to submit project and programme proposals to the Fund was sent out on April 8, 2010.

8. According to the Board Decision B.12/10, a project or programme proposal needs to be received by the secretariat no less than nine weeks before a Board meeting, in order to be considered by the Board in that meeting.

9. The following fully-developed project document titled ""Akamatutu'anga kia Tukatau te Ora'anga ite Pa Enua" PA ENUA ACTION FOR RESILIENT LIVELIHOODS (PEARL)" was submitted by the Ministry of Finance and Economic Management (MFEM) of Cook Islands, which is a National Implementing Entity of the Adaptation Fund.

10. This is the first submission of the proposal using the one-step submission process. It was received by the secretariat in time to be considered in the thirtieth Board meeting. The secretariat carried out a technical review of the project proposal, assigned it the diary number COK/NIE/Multi/2017/1, and completed a review sheet.

11. In accordance with a request to the secretariat made by the Board in its 10th meeting, the secretariat shared this review sheet with MFEM, and offered it the opportunity of providing responses before the review sheet was sent to the PPRC.

12. The secretariat is submitting to the PPRC the summary and, pursuant to decision B.17/15, the final technical review of the project, both prepared by the secretariat, along with the final submission of the proposal in the following section. In accordance with decision B.25.15, the proposal is submitted with changes between the initial submission and the revised version highlighted.

Project Summary

Cook Islands – Akamatutu'anga kia Tukatau te Ora'anga ite Pa Enua" PA ENUA ACTION FOR RESILIENT LIVELIHOODS (PEARL)

Implementing Entity: MFEM
Project/Programme Execution Cost: USD 262,581
Total Project/Programme Cost: USD 2,764,795
Implementing Fee: USD 234,330
Financing Requested: USD 2,999,125

Project Background and Context:

The Cook Islands experiences a range of natural hazards, including tropical cyclones, tsunami, floods and droughts. It is increasingly vulnerable to slow and fast-onset events resulting from natural, man-made and climate related hazards such as coastal erosion from sea level rise, ocean acidification, tropical cyclones and drought. In addition, the existing socio-economic, infrastructure and environmental pressures intensify this vulnerability. The outer islands of the Cook Islands (known as Pa Enua) has been challenged to effectively implement disaster risk management, water and food security plans due to limited national coordination frameworks, information gaps, and duplication of effort resulting in poor and/or insufficient early warning systems and coping strategies.

The objective of the programme is to "build and implement an integrated approach to further increase the adaptive capacity of remote island communities and ecosystems to disaster risk and climate change impacts".

Component 1: Strengthening disaster risk governance to manage disaster risk and enhancing disaster preparedness for effective response to "Build Back Better" in recovery (USD 529,754)

The component will help prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social health, cultural educational, environmental, technological and institutional measures. Emergency Management Cook Islands (EMCI) manages an emergency management Geographic Information Systems (GIS) database – the Cook Islands Geo Portal is a functional and comprehensive repository of Disaster Risk Management (DRM) data and information. Carrying out household surveys using GIS mobile apps technology will enable DRM surveyors to capture DRM data in the field. The last output of this component will be the ability to conduct spatial analysis and create maps that can be included in periodic reports. This will contribute to the monitoring and reporting by tracking progress, and will strengthen the scientific foundation of the learning and knowledge management under this component. Sensitive information will be protected in accordance with EMCI and GIS Cook Islands Taskforce group regulatory body and as determined by the GIS Taskforce.

Component 2: Integrated water security management planning and implementation (USD 735,731)

Through this component a robust water monitoring, reporting and assessment systems will be established and implemented. The Water Committee and GIS Taskforce will add a current water supply profile and a water security data layer to the Cook Islands Geo Portal on behalf of the Pa Enua communities. This will enable sharing of the data with all agencies working within the Water Sector. The Water Security Engineer will assist with ensuring that water monitoring data such as water storage and quality levels is maintained. The completion of Water Security Plans will involve the review of water management plans and Island drought plans. The Water Security engineer will support the review of the plans and water security data will be an important input for the Water Security Plan. Also, the WHO drinking water safety planning approach will be adopted to provide adequate water even in time of drought and support protection of drinking water sources from contamination. The water infrastructure will be assessed by the Water Security Engineer. Lastly, in collaboration with the Ministry of Health and Red Cross, a water quality testing programme will be introduced to all islands. Water testing toolkit training will be delivered in collaboration with the Water Security Engineer, and community education and training programmes will be delivered for communities to support more resilient water infrastructure by the Pa Enua Division of the OPM. A Water Security Fund will be created to provide opportunities to apply the water management tool to inform water investment decisions as well as determine potable water requirements for each island in the Pa Enua.

Component 3: Revitalised agricultural production systems strengthening island food sources and livelihoods in the Pa Enua (USD 1,236,730)

This component will help unlock the potential of the agriculture sector in the Pa Enua thereby ensuring increased food security resilience and preparedness for disasters. For the northern group, this will require nurseries to support improved crops with social/cultural significance and improved trees for coastal protection, and garden system for low nutrient soils. The construction of an island nursery will build on the FAO support as well as be the source of plant materials to upgrade/enhance farm productivity, craft making and biodiversity in the Pa Enua. This output will also look into strengthening capacity of the community to identify local varieties prone to genetic loss so that these can be conserved through other means such as MoA access to tissue culture. This component will also help establish school gardens for the northern group islands. Harvests from the vegetable garden can be a source of vegetables for the community and source of income for school to sustain the vegetable garden over the long term. Other expected outputs include the technical support for tropical orchards for southern group islands, the establishment of a Pa Enua Agriculture Knowledge Sharing Platform, and the allocation of an Economic Resilience Fund (ERF) to fund viable and innovative start-up businesses, that builds on a culture of enterprise in the agriculture sector.

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regular-sized Project

Country/Region: **Cook Islands**
Project Title: **Akamatutu'anga kia Tukatau te Ora'anga ite Pa Enua PA ENUA Action for Resilient Livelihoods (PEARL)**
AF Project ID: **COK/NIE/Multi/2017/1**
IE Project ID: Requested Financing from Adaptation Fund (US Dollars): **2,999,125**
Reviewer and contact person: **Rawleston Moore** Co-reviewer(s): **Sarah Amy Wyatt**
IE Contact Person: **Krystina Tatuava**

Review Criteria	Questions	Comments	Update Comments September 11
Project Eligibility	2. Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of climate change and build in climate resilience?	Yes, the project does support concrete adaptation actions in the disaster risk management, agriculture and water sectors. There are however there are a few clarifications as it relates to the project and its components. **CR 1** Please consider including some specific seasonal rainfall and temperature data for the north and south islands to provide additional information on the baseline scenario. For the section on Relevant Future Climate Change Scenarios, please provide the reference/ footnote for this data as it seems to be missing. **CR2** The project has a focus disaster risk management and reduction, water and food security management. It would be useful to understand the status of hydro-meteorological systems (eg location, distribution) in Cooks Islands as this is a key link for the components of the project. Consideration may be given to enhance the hydro-meteorological network in the Cook Islands if appropriate .	**CR1: Addressed.** **CR2: Addressed.** Information on the hydro-meteorological network of the Cook Islands has been added to the project document.

		CR3: Please clarify whether the project will make efforts to preserve key genetic material including for certain varieties taro and breadfruit. **CR4:** While it is understood that there is a need for food security and enhancing the agriculture sector, the linkages to climate change, agriculture and its impacts in the Cook Islands need to be enhanced some more in the Project/Programme Background and Context part of the document. Currently the decline in agricultural output in the Cook Islands is linked to socio-economic issues rather than the impacts of climate change. produce?	**CR3: Addressed.** Information is provided on how the genetic material will be preserved. **CR4: Addressed.**
		CR5: Further details should be provided on the Water Security Fund and the Economic Resilience Fund, given the overall proposed resources of the project. Can these funds be merged? What is the overall proposed budget of these funds? Will the funds be "revolving funds" and allow for resources to be recycled into the funds? Will these funds be sustainable beyond the life of the project	**CR5: Addressed,** further information has been provided on the funds. The funds will not be "revolving", and the focus of the funds are to finance community level investments and assist community groups. The funds are a conduit to finance specific project activities.
		CR6: Please provide information on proposed chemical (fertilizer and pesticide) management for the project, as run off from pesticides and fertilizers can negatively impact the coastal environment e.g. coral reefs and other marine ecosystems. Is the intention to promote solely organic	**CR6: Addressed.** Information has been provided, on the types of organic products which will be used
	3. Does the project / programme provide economic, social and environmental	Yes the project does provide socio, economic and environmental benefits. Please see **CR6**. **CR7** Please explain if assistance will be provided for farmers to create linkages and supply chains with the tourism sector, for the provision and sale of produce.	**CR7: Partially addressed.** The project should go beyond " look into supply chain pathway" for the tourism sector. In the

	benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	Is there a farmers co-operative or similar organization? **CR8** When expanding the use of specific crops, it will also be important to work to protect existing agrobiodiversity. Locally adapted races are often more tolerant of climatic variability and provide better nutrition. FAO, UNEP and UNDP SGP have experience with this. There is a UNDP/GEF SGP project in FSM called Go Local! which could provide some helpful lessons on promoting local agrobiodiversity and local, healthier foods	background of the proposal it notes that ***"The tourism industry now provides an opportunity for the production of fresh fruits and vegetables for the increasing number of visitors to the Cook Islands. The local cash economy has shifted the focus away from agriculture export to import substitution for the local market and with it comes a number of challenges: maintaining quality and consistency of supply of produce. This is the opportunity the programme will help to address***". One of the key premises of the project is to supply to the local market, thus the project needs to comprehensively address **CR8: Addressed**
	7. Is there duplication of project / programme with other funding sources?	There are synergies and linkages with other projects are identified.**CR9:** Please explain how the project will build on and learn from the completed Pacific Adaptation to Climate Change project. In this project Fiji, Palau, Papua New Guinea and the Solomon Islands focused on Food Production and Food Security, while Nauru, Niue, Republic of Marshall Islands, Tokelau, Tonga and Tuvalu are looking to strengthen their Water Resource Management.	**CR9: Addressed**.

		There maybe some lessons learned from these activities which can be applied to this project	
	9. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	Consultations with Pa Enua communities were overall limited. **CR 10**: Please clarify how the meetings and consultations listed in Table 6 provided communities with an adequate understanding of the project design, as well as of the identification and management of the ESP risks.	**CR10: Partially Addressed.** While the essence of the CR10 related to the consultations and meetings previously held, during the inception phase workshops will be held to provide communities with the understanding of project design and the ESP risks
	12. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	Yes, however please see **CR5**	
	13. Does the project / programme provide an overview of environmental and social impacts / risks identified, in compliance with the Environmental and Social Policy	Partially. At the time of approval, the ESP requires that all the environmental and social risks associated with a project or programme are identified or, in exceptional and justified cases, that there is a mechanism included that will ensure compliance during implementation. The project partially takes an approach of unidentified sub-projects (USPs) that pre-empts adequate ESP risks identification at this stage, in particular through the proposed Water Security Fund and the Economic Resilience Fund. With this approach, an Environmental and Social	**CR11: Not adequately addressed.** Section II.K has been updated to refer to the ESMP of Annex 5. The application should include the full ESMP, not just a summary (Annex 5). The ESMP presented does not show how the risks

	and Gender Policy of the Fund?	Management Plan (ESMP) is required that details how, during project implementation, these USPs, once identified, will be made to comply with the ESP in all aspects and to the same standards as activities that are already identified at the time of proposal submission. **CR 11**: Please include an ESMP that will ensure ESP compliance for the activities mentioned. Alternatively, identify the USP activities and demonstrate their compliance with the ESP in the proposal. The mitigation and management measures included in section III.C should also be included and organised in an ESMP.	identification for USPs will take place, nor how any outcomes will be integrated in the overall ESMP. In addition, the ESMP already includes a comprehensive list of risks (Table 1, p. 181 onwards of Annex 5), including for the USPs whilst it is acknowledged that the ESP risks of the USPs cannot be adequately identified at this stage. The ESDF checklist (Annex 6) may be used to (contribute to) inform the ESP risk identification of USPs but does not as such comply with the ESP.
		P. 92 of the proposal states: "Overall, the programme will meet all environmental requirements and the need for comprehensive impact assessment is not required." Please consider the requirement of the ESP that impact assessments need to be commensurate to the risks identified and that national requirements may complement ESP requirements but do not supplant them. The ESP risks table is completed but the substantiation of the conclusions is largely lacking from this section. The detailed descriptions of compliance with national technical standards (p. 62-65) provides much of the justifications for ESP risks. **CR12**: Please provide justification for the risk identification conclusions under section II.J.	**CR12 Not Adequately Addressed**.

		There are inconsistencies between ESP risks identified in II.J and those listed under III.C. Please also note that compliance with national procedures and requirements is a necessary but maybe not sufficient requirement for ESP compliance. **CR13**	**CR13: Not addressed.** There are still inconsistencies between principles for which no assessment is required for ESP compliance (Table 8) and the corresponding risks assessments (table 14) that there are all marked as low or low-medium.
		A grievance mechanism is lacking. **CR14**: Please add a complaints handling mechanism to the proposal.	**CR14. Partially addressed.** The grievance mechanism included is limited to ESP related matters but should be broader, including other aspects such as gender policy compliance.
		The project is categorised as ESP category C, which is for projects or programmes without environmental or social risks. ESP risks have been identified, and the project includes USPs. **CR 15**: Please clarify how this conclusion is justified or reconsider the project's categorisation	**CR15: Addressed.**
Implementation Arrangements	3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy and	Partially. Please refer to CRs above (point 13.). Please note that accreditation does not constitute a consideration of equivalence between national procedures and the ESP. Compliance with both is required.	Mixed. The information included in section III.C includes of an ESMP, while it should show how the ESP compliance for the identified project activities, as well as that of USPs, will be achieved through the ESMP.

	Gender Policy of the Fund?		
	5. Is an explanation and a breakdown of the execution costs included?	There is a breakdown but no explanation of the use of the costs. **CR16**. Please provide an explanation of the use of the costs	**CR16: Addressed.**
	6. Is a detailed budget including budget notes included?	There is a detailed budget, but there are no notes **CR17**.Please provide the detailed budget notes	**CR17: Addressed.**

Technical Summary	The Cook Islands are located in the South Pacific and are extremely susceptible to climate change. The Cooks experience a number of natural hazards, including tropical cyclones, tsunami, floods and droughts. The outer islands of the Cooks have had extreme difficulties implementing disaster risk management and food and water security plans to address the changing climate The objective of the project is to "build and implement an integrated approach to further increase the adaptive capacity of remote island communities and ecosystems to disaster risk and climate change impacts". Additionally, the project will aim to strengthening national and local capacity for monitoring and decision making to respond and to reduce risks associated with climate change, establishing climate resilient water management instruments using integrated and community based approach and raise ing awareness and establish a knowledge exchange platform to increase adaptive capacity to revitalise agriculture production systems. Expected outcomes of the project will include increased water and food security and resilience along with a reduction in overall risks to disasters The initial review of this proposal found that this project had some qualities and merits to help the Cook Islands. However, there was a need for some minor improvements in the project in order for it to go forward. A number of clarification requests and corrective action requests were made. The final review finds that the majority of clarifications have been addressed. However, compliance with the Environmental and Social Policy of the Fund still needs further demonstration. Also, it is observed that the project should go beyond "looking into supply chain pathway" for the tourism sector. In the

	background of the proposal it notes that "*The tourism industry now provides an opportunity for the production of fresh fruits and vegetables for the increasing number of visitors to the Cook Islands. The local cash economy has shifted the focus away from agriculture export to import substitution for the local market and with it comes a number of challenges: maintaining quality and consistency of supply of produce. This is the opportunity the programme will help to address".* One of the key premises of the project is to supply to the local market, thus the project needs to comprehensively address that challenge. The following observations are made: a) The proposal should demonstrate how it will look at addressing the challenge of maintaining quality and consistency of supply of fresh fruits and vegetables produce; b) The consultation process should be strengthened, to include community views and understanding, notably on the project design and the Environmental and Social Policy (ESP)-related risks; c) The fully-developed project document should include a full Environmental and Social Management Plan (ESMP) and provide adequate justification for the identification of risks, avoiding inconsistencies between principles for which no assessment is required for ESP compliance and the corresponding risks assessments; d) The proposal should include a grievance mechanism which would not only include ESP related matters but also other aspects such as gender policy compliance.
Date:	17 September 2017

DATE OF RECEIPT:
ADAPTATION FUND PROJECT ID:
(For Adaptation Fund Board Secretariat Use Only)

ADAPTATION FUND

PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category:	Regular programme
Country:	Cook Islands
Title of Project/Programme:	"**Akamatutu'anga kia Tukatau te Ora'anga ite Pa Enua"** **PA ENUA ACTION FOR RESILIENT LIVELIHOODS (PEARL)**
Type of Implementing Entity: Implementing Entity:	National Implementing Entity Ministry of Finance and Economic Management (MFEM)
Executing Entity/ies:	Climate Change Cook Islands (Office of the Prime Minister)
Amount of Financing Requested:	2,999,125 (in U.S Dollars Equivalent)

Acronyms

ADB	Asian Development Bank
AF	Adaptation Fund
AgINTEL	Agriculture Intelligence
AWP	Annual Work Plan
AWS	Automated Weather Station
BSRP	Building Safety and Resilience in the Pacific
BTIP	Business Trade and Investment Board
CC	Climate Change
CCCI	Climate Change Cook Islands
CCD	Climate Change Division
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
CERD	Convention on the Elimination of Racial Discrimination
CIG	Cook Islands Government
CIMP	Cook Islands Marine Park
CIMS	Cook Islands Meteorological Service
CINCW	Cook Islands National Council of Women
CIRC	Cook Islands Red Cross
CIRESP	Cook Islands Renewable Energy Sector Project
CLEWS	Climate Early Warning System
COP	Conference of the Parties
COS	Chief of Staff
CROP	Council of Regional Organisations in the Pacific
CSDS	Cook Islands Strategy for the Development of Statistics
CSO	Civil Society Organisation
DCD	Development Coordination Division
DRM	Disaster Risk Management
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMCI	Emergency Management Cook Islands
ENSO	El Nino Southern Oscillation
EOC	Emergency Operation Centre
ERF	Economic Resilience Fund
ESD	Environmental Significance Declaration
ESMP	Environmental and Social Management Plan
ESPM	Environmental and Social Management Plan
ESS	Environment and Social Safeguards
FAO	Food and Agriculture Organization
FRDP	Framework for Resilient Development in the Pacific
GADD	Gender and Development Division
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GEWE	Gender Equality and Women's Empowerment
GIS	Geographic Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit, the German Federal Enterprise for International Cooperation
GPS	Global Positioning System
ICC	International Criminal Court

ICCPR	International Covenant on Civil and Political Rights
ICESC	International Covenant on Economic, Social, and Cultural Rights
ICI	Infrastructure Cook Islands
IDA	Initial Disaster Assessment
IDM	Introduction to Disaster Management
IFRC	International Federation of Red Cross and Red Crescent
IG	Island Government
JNAP II	Cook Islands Second Joint Action Plan for Climate Change and Disaster Risk Management 2016 -2020
LOA	Letter of Agreement
M&E	Monitoring and Evaluation
MFAI	Ministry of Foreign Affairs and Immigration
MFAT	Ministry of Foreign Affairs and Trade
MFEM	Ministry of Finance and Economic Management
MoA	Ministry of Agriculture
MOE	Ministry of Education
MoH	Ministry of Health
MoU	Memorandum of Understanding
MTBF	Medium Term Budgeting Framework
MTE	Mid-Term Evaluation
NCD	Non-communicable diseases
NDA	National Designated Authority
NDMO	National Disaster Management Office
NDRMC	National Disaster Risk Management Council
NES	National Environment Service
NESAF	National Environment Strategic Action Framework
NGO	Non-Government Organisation
NIE	National Implementing Entity
NIEU	National Implementing Entity Unit
NPM	National Project Manager
NSDC	National Sustainability Development Commission
NSDP	National Sustainability Development Plan
NZD	New Zealand Dollar
NZS	New Zealand Standards
OPM	Office of the Prime Minister
PAC	Programme Advisory Committee
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
PEG	Pa Enua Governance
PEGU	Pa Enua Governance Unit
PMA	Project Monitoring Assessment
PMU	Programme Management Unit
PPP	Programs/Projects/Partnership
PSGS	Purchase and Sale of Goods and Services
QWP	Quarterly Work Plan
RE	Renewable Energy
REDD	Renewable Energy Development Division
RMI	Republic of the Marshall Islands
SIDS	Small Island Developing States
SPC	Secretariat of the Pacific Community
SPCZ	South Pacific Convergence Zone
SPREP	Secretariat of the Pacific Regional Environment Programme
SRIC	Strengthening the Resilience of our Islands
TAC	Technical Advisory Committee

TOR	Terms of Reference
TTV	Te Tarai Vaka Activities Management System
TWG	Technical Working Group
UAS	Unmanned Aircraft System
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention Climate Change
USD	US Dollar
V&A	Vulnerability and Adaptation
VSA	Volunteers Services Association
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization
WMO	World Meteorological Organization

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Project / Programme Background and Context:

A. Problem the proposed programme is aiming to solve

The Cook Islands experiences a range of natural hazards, including tropical cyclones, tsunami, floods and droughts. It is increasingly vulnerable to slow and fast-onset events resulting from natural, man-made and climate related hazards such as coastal erosion from sea level rise, ocean acidification, tropical cyclones and drought. In addition, the existing socio-economic, infrastructure and environmental pressures intensify this vulnerability. The outer islands of the Cook Islands (known as Pa Enua) has been challenged to effectively implement disaster risk management, water and food security plans due to limited national coordination frameworks, information gaps, and duplication of effort resulting in poor and/or insufficient early warning systems and coping strategies.

B. Geographic and socio-economic context

Geographic Context

The Cook Islands is an ocean state 3010km north east of New Zealand. It is comprised of 15 small islands scattered over about two million square kilometres of the Pacific Ocean. 12 of these islands are inhabited and seven islands have a highest point of less than 15 metres. The small island developing state (SIDS) lies in the centre of the Polynesian Triangle, flanked by Fiji 2,300 km to the west, Tahiti 1,140 km to the east, Hawaii 4,730 km north and New Zealand 3,010 km southwest. The country is self-governing in free association with New Zealand since 1965. The Cook Islands is responsible for internal affairs while New Zealand retains responsibility for external affairs and defence, in consultation with the Cook Islands, and Cook Islanders are citizens of New Zealand. Rarotonga is the hub of commercial activities and tourism, and was home to around 72 per cent of the population as at Census 2016. Only a small per cent of the population lives on the remaining islands, with around 20 per cent of the population living in the five southern group islands and 7 per cent living in the northern group islands. Five are elevated fertile volcanic islands, while the rest are atolls, except Mitiaro, which is raised coral. The southern group islands are within 300 km of Rarotonga. The remote northern group of Pa Enua, more than 1,250 km from the capital, is home to 7% of the population and is comprised of seven low-lying, sparsely populated, coral atolls and sand cays, with little arable land.

Economic[1]

The widely dispersed islands of the Cook Islands have a significant impact on the economy. Rarotonga is the hub of commercial activities and tourism, and is home to around 72 per cent of the population as at Census 2016. Only a small percentage of the population lives on the remaining islands, with around 20 per cent of the population living in the five southern group islands and 7 per cent living in the

[1] Sources include Emergency Management Cook Islands and Climate Change Cook Islands Office of the Prime Minister (2017), Cook Islands Second Joint National Action Plan for Climate Change and Disaster Risk Management 2016-2020

northern group islands. Due to the small populations on the Pa Enua, the economies are largely built on subsistence farming, with some islands working towards small tourism, agriculture and pearl industries making the economic integration of the Pa Enua with Rarotonga and global markets a challenge. This requires novel solutions, substantial levels of subsidisation, or both. The Cook Islands Government thus provides high levels of support to the Pa Enua to ensure that a reasonable standard of living is achieved for all residents.

This does not mean that economic development is impossible – it simply means that the Pa Enua face development challenges that need to be acknowledged, and are separate from those faced in Rarotonga. There are examples of successful businesses and initiatives in the Pa Enua that have significantly benefitted their local communities, as well as activities that have capitalised on the booming tourist growth in Rarotonga (such as parrotfish from Palmerston and on-travel to Aitutaki).

Tourism and related services generate about 80 percent of GDP (Gross Domestic Product) in recent years with New Zealand and Australia as the key markets. Reliance on tourism makes Cook Islands vulnerable to external shocks and natural disasters. For the former, an economic downturn in New Zealand means the Cook Islands would be at risk of losing up to 65 per cent of its current tourism base. For the latter, a major cyclone hitting Rarotonga would require time for the tourism industry to rebuild to a standard acceptable to tourists, affecting both economic growth and government revenues.

Apart from distance and isolation from Rarotonga, narrow economic bases and depopulation (7% and 4% decline in population between 2011 and 2016 for southern and northern groups, respectively) are key constraints to economic development in the Pa Enua. A summary profile of each of the inhabited islands of the Pa Enua are described in Annex 1 and provides an overview of the population, land/lagoon area and use as well as distance from the Capital, the main island of Rarotonga, which clearly demonstrates the challenges of these islands as a result of the physical remoteness of many communities from support services. It also summarises for each island the key sectors, issues and vulnerabilities, the most recent development interventions for each island to date and finally the focus of this AF proposal for each island.

Over the past 40 years, the economic prospects of the Pa Enua have been further eroded by continued depopulation. The cost of business in the Cook Islands is considered to be high due to numerous factors. The country's small size and isolation, which doubles for those in the Pa Enua, means the majority of inputs for production are imported. The high cost of finance is also seen as a major challenge to business investment and development at more than 9% pa. Despite this, inequality between Rarotonga and the Pa Enua remains an issue.

The Cook Islands was once a vibrant economy based on agriculture and agricultural products. During those years citrus were grown productively in the Pa Enua, (Aitutaki, Mangaia, Atiu and Mauke) while crops like bananas and taro were grown for export in Rarotonga and Aitutaki, while pineapples were selectively grown only in Mangaia and Atiu mainly for processing into pineapple juice and other pineapple products including fruit salads, etc. for export to New Zealand. Coconuts for copra

were produced in all islands especially the northern group islands for export to New Zealand to be milled into coconut oil.

Today, agriculture contributes less than 3.3 per cent to GDP. Agriculture is largely built on subsistence farming with small uneconomic farms. Over the past 20 years, the agriculture sector in the Cook Islands has undergone a significant transformation. The value of imported food consumption per capita has more than doubled, and foreign exchange generated from food and beverage exports has plummeted to just over $3 million. As Cook Islanders of working age have increasingly moved from the Pa Enua to Rarotonga and from Rarotonga to New Zealand, participation in the agricultural activities has fallen dramatically. Growth in the tourist and the service sectors of the economy has effectively raised wages higher than the agriculture sector can profitably pay, resulting in the migration of labour to other sectors. In addition, increased investment in these industries has resulted in rising land values and the conversion of agricultural land into land for the tourism and residential property developments. Whilst a small but vibrant agribusiness sector remains, competition from more efficient producers in Asia and the Pacific Rim have priced primary sector products from the Cook Islands out of export markets, and many domestic markets.

The tourism industry now provides an opportunity for the production of fresh fruits and vegetables for the increasing number of visitors to the Cook Islands. The local cash economy has shifted the focus away from agriculture export to import substitution for the local market and with it comes a number of challenges: maintaining quality and consistency of supply of produce. This is the opportunity the programme will help to address.

Construction has been a recent economic driver due to significant capital works investments with more works planned in the short to medium term, such as the southern group Solar Energy project. Fishing (including pearl farming), agriculture and financial services are the other key economic sectors.

The development of the commercial offshore fisheries since 2000 with rising fresh chilled tuna exports has partly offset the fall in the pearl industry. The black pearl industry was a key export earner and a significant economic contributor for some remote communities in Manihiki, the centre of pearl production. A combination of environmental factors (cyclones, pearl oyster disease and hypoxia (causing mass mortality of shellfish) nearly decimated the industry. Apart from the a very small pearl industry in Manihiki, Rakahanga and Penrhyn and tourism on Aitutaki and Atiu, there is very limited economic activity in the Pa Enua. However, there is increasing activity in the agricultural sector both for commercial and subsistence farming and fishing with the introduction of new crops and new technology supported by climate change programmes such as the SRIC. In the 2016 Census[2], the number of households (out of total of 1,200) in the Pa Enua engaged in economic activities are:

- Agriculture – 952 (79% of households) primarily for home consumption with only 2% engaged in commercial agriculture
- Handicraft production – 263 (22% of households) primarily for home consumption with only 4% engaged in commercial production

[2] Cook Islands Census 2016, Statistics Office, Ministry of Finance and Economic Management

- Fishing inside reef – 477 (40% of households) primarily for home consumption with only 1% engaged in commercial fishing
- Fishing outside reef – 169 (14% of households) primarily for home consumption with only 1% engaged in commercial fishing.

Social[3]

The Cook Islands has a high GDP per capita relative to other Pacific Island countries. However, communities on the Pa Enua and Pa Enua migrants to Rarotonga are considered vulnerable and experience hardship due to lack of employment opportunities (e.g. unemployment rate of 15% in the southern group) and access to basic social services. Pa Enua residents migrating to Rarotonga or overseas in search of employment have contributed to population decline. Growing numbers of young adults and school leavers lack education qualifications and necessary skills for the local job market.

There are growing problems facing Cook Islands with regards to non-communicable diseases (NCDs) such as diabetes, cardiovascular diseases, hypertension, obesity and poor diet. NCDs are the main cause of mortality in the Cook Islands.

The islands of the northern group have no running streams and therefore have an urgent priority to climate proof critical water supplies by ensuring rainfall collection roofs are maintained and further water infrastructure is in place. The southern group has also experienced droughts in recent years, which have tested the small communities' innate resilience escalating demand for water.

Climate Impacts and Adaptive Capacity in the Agriculture Sector

The Cook Islands Second National Communication under the United Nations Framework Convention for Climate Change (submitted 2012) identifies the agricultural sector as highly vulnerable to climate change and will be negatively influenced by cyclones (which cause crop and tree damage), floods (which destroys vegetables and cause root crops to rot, and waterlogged soils), droughts (which reduce or stop crop growth) as well as temperature increases (which can affect crop growth and heat stress on animals) and sea level rise (which contributes to salination of water lenses and storm surge damage)[4]. Development (on good agriculture land due to land ownership system) and social-economic factors have reduced food productivity.

These are the areas in which highly valued root crops are grown, increased salinity levels in this land means crops will not grow. Moreover, a reduction in the size of the island, resulting from land loss accompanying sea level rise, is likely to reduce the thickness of the freshwater lens on atolls by as much as 29%. This can have a drastic effect on taro plantations.

[3] Sources include Cook Islands Second Joint National Action Plan for Climate Change and Disaster Risk Management 2016-2020; Cook Islands Government, Budget estimates 2017/18, Book 1, Appropriation Bill, Appropriations and Commentary

[4] McMichael A, Woodru r, Whetton P, Hennessy K, Nicholls N, Hales S, Woodward A, Kjellstrom T, '***Human Health and Climate in Oceania – A Risk Assessment***' www.health.gov.au/pubhlth/strateg/envhlth/climate/ 2002

Variations in rainfall patterns can have a significant effect on the yield and the life of agricultural crops and in particular the main export crops of the Cook Islands, pawpaw and taro. Agriculture in the Cook Islands has suffered frequently from the effects of droughts while farmers have also observed changes in the timing of harvesting[5].

Sea level rise can also threaten agriculture in the Cook Islands due to increased flooding and coastal erosion; this already creates major problems to agricultural activities particularly for atoll islands in the northern group, reducing the already limited land available on these islands. Storm surges have a greater impact on atoll islands as a result of rising sea levels for example, cyclone Percy in 2005 destroyed entire taro plantation areas on Pukapuka. They were completely inundated by salt water as the result of a storm surge. It took three years before taro could again be reintroduced to the island[6].

Increases in air temperature and other climatic changes can also lead to increased incidence of pests and disease which are likely to threaten agriculture. These climatic changes can also cause suitable temperature for pests to increase abundantly. An example of this is the potato whitefly which has become a concern in the Cook Islands most likely as a result of periods of wetter conditions.

Issues such as reduced food security, a less nutritional diet and an increased reliance on imported foodstuffs tend to be associated with lifestyle diseases.

Over the years people have already adapted to extreme weather events by planting low lying crops, not planting close to streams or the ocean and not planting crops that must be planted or fruit during the cyclone season.

Adaptive farming practices and biological agriculture have been actively encouraged by the Ministry of Agriculture will be continued and promoted further in Component 3 of the programme. Practices such as mulching help improve water retention in soils, while drip irrigation systems (proposed as investments from the Economic Resilient Fund) are used widely on Rarotonga will help to both control weeds and conserve water.

Hydroponic agriculture was introduced under the SRIC programme in the Pa Enua to supply fresh fruits and vegetables to islands with poor soils. However other traditional methods are also being used to ensure food security on the Pa Enua.

Climate Trends, Impacts, and Adaptive Capacity

Climate trends data that is available and analysed include rainfall, tropical cyclones, temperature and sea level rise, and is sourced from the Pacific-Australia Climate Change Science and Adaptation Planning Program Partners, 2015: Current and future climate of the Cook Islands.

[5] Food and Agriculture Organisation of the United Nations (FAO), *Climate Change and Food Security in Pacific Island Countries*, Rome, 2008. p209
[6] FAO (2008) as above

The climate[7] of the Cook Islands is sub-tropical to tropical oceanic, moderated by trade winds. The South Pacific Convergence Zone (SPCZ, Figure 1), the largest and most persistent extension of the Inter-tropical Convergence Zone, usually lies between the two main island clusters (the northern and southern groups) of the Cook Islands. This, and the wide latitudinal separation between the island groups, means that the current climates of the two groups are somewhat different.

This means that during the El Niño-Southern Oscillation (ENSO) events, a natural climate pattern across the tropical Pacific Ocean drives annual variability in Cook Islands' climate as well. During El Niño, the southern islands experience drought and the northern islands experience more rainfall. During La Niña, the opposite effect of flash flooding is experienced in the southern islands and drought in the northern islands.

The emergence of climate change has served to compound an already vulnerable situation for the Pa Enua islands by, amongst other things, making extreme climatic events become more frequent and more intense. Apart from the hazards created by more intense weather events climate change has also added a whole new suite of inter-related hazards, many of them slow-onset in nature – such as global warming, changing patterns of seasonal climatic conditions, sea level rise, ocean acidification and changes to our ecosystems. These changes in turn impact on the distribution, and indeed survival, of many important plant and animal species essential for the Pa Enua. This holds potentially catastrophic implications for certain key sectors such as agriculture and fishing in the Cook Islands. Capacity to adapt to these changes are addressed by the AF proposal.

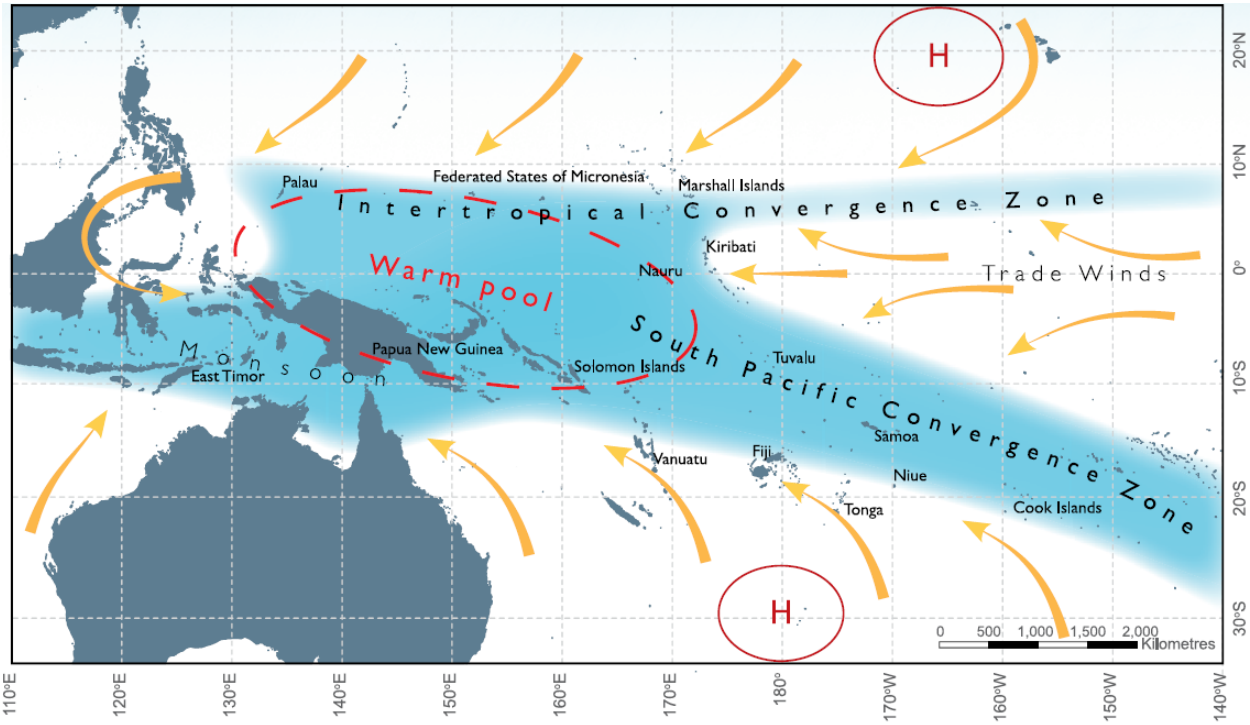


Figure 1: South Pacific Convergence Zone (SPCZ) in relation to Inter-tropical Convergence Zone in the South Pacific Ocean.

[7] Cook Islands climate information is sourced from: Pacific-Australia Climate Change Science and Adaptation Planning Program partners, 2015: Current and future climate of the Cook Islands.

Rainfall

The SPCZ (a band of heavy rainfall from air rising over warm waters where winds converge resulting in thunderstorm activity) strongly affects rainfall in the Cook Islands. From November to May, the SPCZ is most active and centered close to the southern group. In the four-month sub-period (from November to March), the northern group also receives significant rainfall, as the SPCZ is wide and strong enough for the northern group to also receive significant rainfall. June to October is the driest months in the Cook Islands. There has been substantial variation in rainfall from year to year since 1899 while there is little change in extreme daily rainfall since the mid-1930s. The average rainfall annually is 2000mm with a third of this rainfall occurring during the dry season (May-October) and two thirds during the wet season (November-April~~).~~) as shown in average seasonal rainfall data for the northern and southern groups in Figure 2.

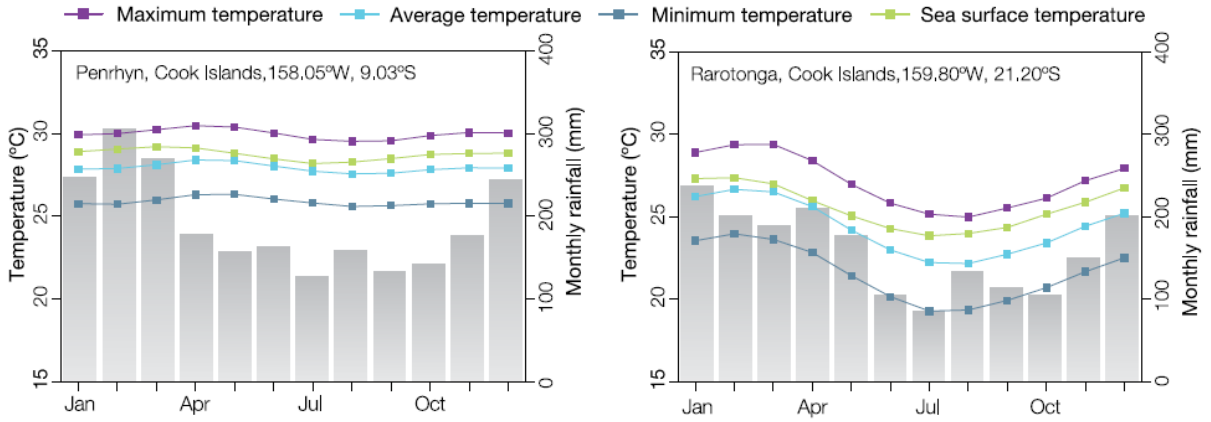


Figure 2: Seasonal rainfall and temperature at Penrhyn (northern group) and Rarotonga (southern group)[8]

Drought and flooding also rank highly on the Cook Islands risk profile and can also be linked to the El Niño and La Niña conditions. Therefore rainfall is an important critical factor for the Pa Enua population.

In particular the islands in the northern islands are low atolls with no running streams. For this reason the people of these islands are critically dependent on rainwater for their day to day living. However the islands typically have shallow ground water lenses (fresh and brackish) which are able to provide a supplementary water source. Rainwater is collected from the roofs of most community buildings, residential houses and also from purpose built rainwater collection roofs or locally known as “Fare Vai” or “Wale Wai” constructed by Government in the 1950’s. Rainwater is mainly used for potable (drinking) purposes and for non-potable purposes when abundant. As a result the northern islands population have been extremely conservation conscious to prolong supply.

Most of the islands in the southern group maintain a reticulated water supply from various sources: stream and boreholes on Mangaia and boreholes or galleries on the other southern group islands. A summary of water sources on each island is summarised in Table 1.

[8] Source: Pacific-Australia Climate Change Science and Adaptation Planning Program Partners, 2015: Current and future climate of the Cook Islands

Table 1: Water Sources on each Island in the Pa Enua

Island	All purpose	Drinking water	Emergency - Mild	Emergency -Severe	Population	Dwelling	Average person /HH	70.00 Normal Demand - 70litres/P/Day
		Drinking Water Source			2011 Stats			
Aitutaki	Piped & Tank (Rainwater)	Piped & Tank (Rainwater)	Spring	Brackish Water	2038	482	4.23	295.98
Atiu	Tank (Rainwater)	Tank (Rainwater)	Spring	Brackish water - Cave	480	137	3.50	245.26
Mangaia	Piped & Tank (Rainwater)	Tank (Rainwater)	Spring	Brackish water - Cave	572	170	3.36	235.53
Mauke	Piped & Tank (Rainwater)	Piped & Tank (Rainwater)	Low impact	Brackish water - Cave	307	92	3.34	233.59
Mitiaro	Piped & Tank (Rainwater)	Tank (Rainwater)	Freshwater - Cave	Brackish water - Cave	189	58	3.26	228.10
Palmerston	Tank (Rainwater)	Tank (Rainwater)	Brackish Well	Sea Water	60	13	4.62	323.08
Pukapuka	Tank (Rainwater)	Tank (Rainwater)	Brackish Well	Sea Water	451	101	4.47	312.57
Nassau	Tank (Rainwater)	Tank (Rainwater)	Brackish Well	Sea Water	73	13	5.62	393.08
Manihiki	Tank (Rainwater)	Tank (Rainwater)	Brackish Well	Sea Water	239	78	3.06	214.49
Penrhyn	Tank (Rainwater)	Tank (Rainwater)	Brackish Well	Sea water	213	53	4.02	281.32
Rakahanga	Tank (Rainwater)	Tank (Rainwater)	Brackish Well	Sea Water	77	21	3.67	256.67

JNAP has identified that Rainfall Variation will have impacts on the following sectors:

- Coastal Zones: Runoff sedimentation and salinity
- Marine Resources and Fisheries: Habitat salinity
- Water Supply and Quality: Shortages, blockages, contamination
- Agriculture, Food Security and Diet: Drought, flooding, crop diseases
- Human Health and Wellbeing: Favourable mosquito breeding conditions

The AF proposal has taken into account the JNAP rainfall variation vulnerabilities and adaptation measures are included as part of the programme including responding to the question posed by the JNAP “Are we resilient”.

Tropical Cyclones

The Cook Islands is prone to a range of both natural and man-made hazards with the most common hazards being cyclones and drought, due to our position on the cyclone belt and the current El Nino conditions. Between 1969 and 2010, Cook Islands had an average of 18 cyclones per decade varying widely from year to year with none in some seasons but up to six in others (Figure 2) with cyclones occurring more frequently in El Niño years and average cost per cyclone of $6.5 million. Cook Islands sustained minimal damage on Penrhyn from severe tropical Cyclone Winston, the strongest cyclone in recorded history[9]. November to April is the period that tropical cyclones, major weather events that can cause significant devastation, tend to affect the Cook Islands

[9] Cook Islands Second Joint National Action Plan for Climate Change and Disaster Risk Management 2016-2020 (JNAP II)

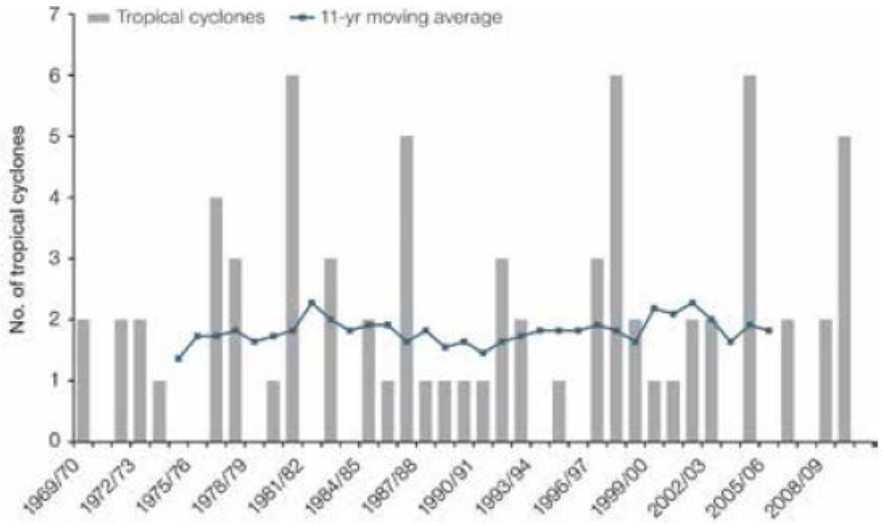


Figure 3: Cyclones in Cook Islands between 1969 and 2010 with 11 year moving average in blue line.

Cooks Islands is among the top 20 countries globally (Figure 3) with highest average annual disaster losses as determined by gross domestic product (GDP).

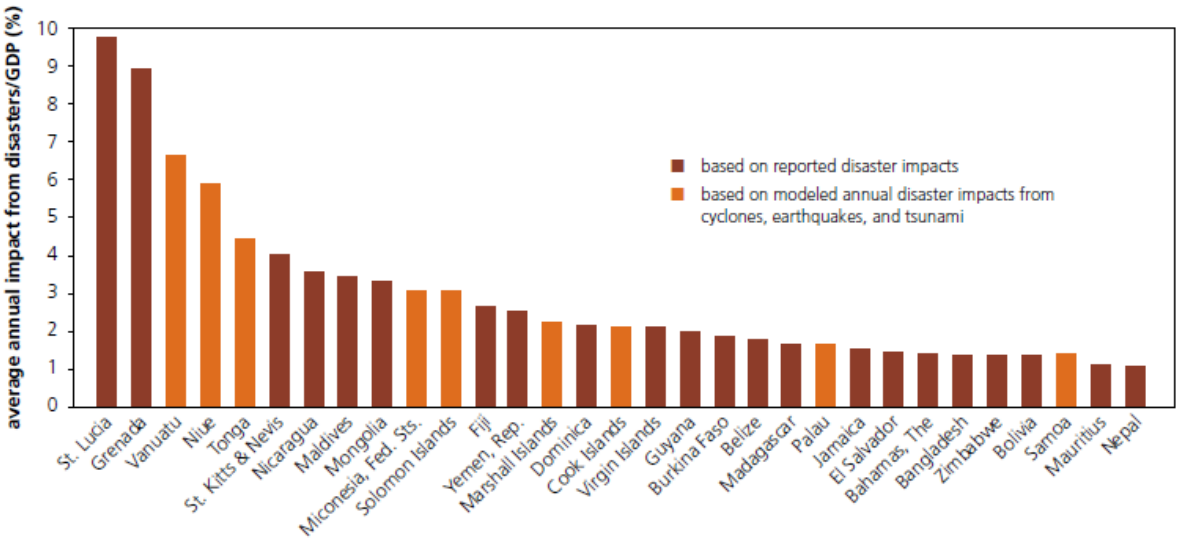


Figure 4: Average annual impact from disasters as % of GDP
Source: World Bank (2012), Acting today for tomorrow: A policy and practice note for climate and disaster resilient development in the Pacific Islands region

In particular cyclone risk was highlighted in 2005 when five consecutive cyclones over a period of two months, including four category five storms, caused damage estimated at $[10]14.5 million. Previously, Rarotonga was extensively damaged by Cyclone Sally in January 1987. And in November of 1997, Cyclone Martin destroyed about 90% of houses and killed 19 people on Manihiki atoll. The most recent major cyclone occurred in 2010, damaging 78% of houses in Aitutaki, devastating crops, disrupting tourism, and required a $6.9 million recovery and reconstruction program. Recent analysis undertaken under the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) indicates that the country faces an average annual loss of $4.9 million from tropical cyclones alone, with probable maximum losses of $56.8

[1010] $ means New Zealand Dollars (NZD) for the rest of this proposal

million, $103.0 million and $198.1 million from 1-in-50, 1-in-100 and 1-in-250 year events respectively, equivalent to 18.8%, 34.0%, and 65.5% of GDP in FY2016.

JNAP has identified that Tropical Cyclones and Extreme Weather Events will have impacts on the following sectors:

- Coastal Zones: Wave damage, erosion
- Marine Resources and Fisheries: Damage to coastal infrastructure and vessels, stock loss
- Water Supply and Quality: Water pollution, infrastructure damage
- Agriculture, Food Security and Diet: Damage to Infrastructure and crops
- Human Health and Wellbeing: Injury during and increased disease risk following stress and social disruption

The AF proposal has taken into account the JNAP tropical cyclone extreme weather events and vulnerabilities and adaptation measures are included as part of the programme.

Temperature

Temperatures have increased in the Cook Islands consistent with the global pattern of warming. Recent research on coral bleaching undertaken to inform the Third National Communication, would suggest that this is a major issue in the Cook Islands and it can be linked to elevated sea temperatures and human activity. Since 1950, maximum temperatures have increased at a rate of 0.09°C per decade in Rarotonga and Penrhyn while minimum temperatures have increased faster at Rarotonga (0.19ºC) than at Penrhyn (0.04ºC). Rarotonga has higher warm temperature extremes, more warm days/nights and less cool nights. The northern group's position so close to the equator results in fairly constant temperatures throughout the year, while in southern group temperatures cool off during the dry season (May to October, Figure 2 above). Changes in temperatures are strongly tied to changes in the surrounding ocean temperature.

JNAP has identified that Temperature Rise will have impacts on the following sectors

- Coastal Zones: Coral Bleaching
- Marine Resources and Fisheries: Pearl Diseases, Food Chain, Migratory and distribution changes of fish
- Water Supply and Quality: Quantity demand, quality, vectors
- Agriculture, Food Security and Diet: Prevalence of invasive species, productivity
- Human Health and Wellbeing: Emergence of tropical diseases, heat stress, productivity impacts

The AF proposal has taken into account the JNAP temperature rise vulnerabilities and adaptation measures are included as part of the programme.

Apart from coral bleaching, ocean acidification threatens reef ecosystems. Approximately a fourth of the carbon dioxide produced from human activities is absorbed and reacts with sea water, the ocean's acidity increases slightly and

impacts on the growth of corals and organisms that are critical to the balance of tropical reef ecosystems. Ocean acidification has been slowly increasing in the Cook Islands' since the 18th century.

Sea level rise

Seasonally, trade winds and the SPCZ influence wind-waves in the Cook Islands while ENSO and Southern Annular Mode drive these from year to year. The southern group tend to experience larger storm waves (typically from tropical cyclones) than the northern group. The sea level has risen near the Cook Islands by about 4 mm per year since 1993, slightly higher than the global average of 2.8–3.6 mm per year. While the global average sea level rise is due ocean water warming/expanding and the melting of glaciers and ice sheets, the higher rise may be natural fluctuations that take place year to year or decade to decade caused by phenomena such as the ENSO.

Coastal erosion is already evident on all islands of the Pa Enua as a result of sea surge intrusion with limited information to confirm whether this is also due to sea level rise.

JNAP has identified that Sea Level Rise will have impacts on the following sectors:

- Coastal Zones: Erosion, increased storm surge
- Marine Resources and Fisheries Damage to coastal infrastructure, unsuitable growing conditions
- Water Supply and Quality: Increased salinity of freshwater table
- Agriculture, Food Security and Diet: Increased salinity of low lying growing areas
- Human Health and Wellbeing: Impact on coastal infrastructure, housing

The AF proposal has taken into account the JNAP sea level rise vulnerabilities and adaptation measures are included as part of the programme.

Relevant Future Climate Change Scenarios

Projections for future climate[11] of Cook Islands through 21st century are:

- While average annual **rainfall** will stay similar to the current climate, the high emission scenario projects more extreme rain events and the northern group getting drier during the dry season. Drought frequency in the southern group will be similar to current levels but will increase slightly in the northern group under the high emission scenario.
- While **El Niño and La Niña events** will continue to occur, there is little consensus whether these will change in intensity or frequency. A recent study[12] showed that that the frequency of extreme El Niño events at 1.5ºC warming (aspirational target of the Paris Agreement) doubles that of the pre-industrial level (once every 10 years vs 20 years), and continues to increase long after stabilisation of the 1.5ºC warming.
- While less frequent, **tropical cyclones** are expected to increase in intensity (i.e. increase in the average maximum wind speed (2% to 11%) and rainfall intensity (about 20% within 100 km of the cyclone centre).

[11] Pacific-Australia Climate Change Science and Adaptation Planning Program Partners, 2015: Current and future climate of the Cook Islands.

[12] Guojian, Wang,Wenju Cai, Bolan Gan, LixinWu, Agus Santoso, Xiaopei Lin, Zhaohui Chen and Michael J. McPhaden (2017), Continued increase of extreme El Niño frequency long after 1.5 _C warming stabilization, Nature Climate Change.

- Annual mean **temperatures** and extremely high daily temperatures will continue to rise. By 2030, under a very high emissions scenario, the range in the increase in temperature is 0.5–1.0°C in the northern group and 0.4–1.0ºC in the southern group.
- The **sea level** will continue to rise (7–17 cm for all emissions scenarios). Combined with natural year-to-year changes, the sea level rise will intensify the impact of storm surges and coastal flooding. The sea level rise may worsen due to unknown effect of how large ice sheets such as Antarctica and Greenland contribute to sea-level rise.
- **Ocean acidification** is expected to continue with increased risk of coral bleaching. Apart from acidification, other stressors to the health of reef ecosystems include storm damage and fishing pressure.

Environment[13]

The islands are divided into two groups: a northern group and a southern group. The northern group consists of five atolls (Pukapuka, Rakahanga, Manihiki, Suwarrow and Penrhyn) and a sand cay (Nassau). The southern group consists of four makatea islands (Mangaia, Atiu, Mauke and Mitiaro), two atolls (Palmerston and Manuae), one almost-atoll (Aitutaki), one sand cay (Takutea) and one high island (Rarotonga). The three uninhabited islands (Suwarrow, Takutea, and Manuae) are wildlife reserves. The northern group islands have very limited terrestrial flora and fauna, and an abundant and diverse marine fauna. The southern group has its richest terrestrial flora and fauna on the high island of Rarotonga, followed by the raised islands of Mangaia, Atiu, Mauke and Mitiaro. The lagoon and nearshore marine biodiversity is greatest on the atolls of Palmerston and Manuae, and on the almost-atoll of Aitutaki. Annex 1 provides an overview of the land/lagoon area of the Pa Enua.

While the natural environment of the Cook Islands remains high quality, growing pressure from modernisation, tourism development, agriculture and fishing may change this. Threats to the environment include pollution (liquid and solid waste), sedimentation of in-shore coastal ecosystems, contamination of underground water, soil erosion, over-harvesting of coastal marine resources, and loss of biodiversity resulting from the transformation of natural landscapes. With the Environment Act 2003, the Government has developed stronger environmental management systems (development applications subject to a robust Environmental Impact Assessment (EIA)), raised public awareness and built institutional capacity.

Planning for adaptation to the impacts of Climate Change is gaining momentum at the national and community levels. The National Environment Strategic Action Framework (NESAF) outlines a number of immediate, short-term and medium-term actions to strengthen capacity and resilience.

Further to the above commitments towards maintaining sustainable land based environment, the entire Cook Islands EEZ has been designated as the Cook Islands Marine Park, the second largest of its kind in the world. Called Marae Moana, it will

[13] Sources include Cook Islands Second Joint National Action Plan for Climate Change and Disaster Risk Management 2016-2020

promote sustainable development and balance economic growth with conservation of the ocean's natural assets with marine protected areas around every island, extending 50 nautical miles from each and every island – this area is reserved specifically for the enjoyment of the local people of each island and where no commercial fishing or mining are permitted.

The Cook Islands Government has also made a bold commitment towards transforming the energy sector 100% reliant on renewable energy by 2020 with specific details set out in the updated Cook Islands Renewable Energy Chart 2016. These commitments to mitigate and adapt to climate-related impacts in the Cook Islands, has seen the northern islands now fully renewable and the southern group islands due to be completed by December 2019. It is estimated that a further $88 million is required, over the next 5 to 6 years, for the Renewable Energy (RE) and associated infrastructure investments to achieve 70 per cent of the Renewable Energy target. This investment involves battery storage systems, wind and PV generation systems including a rise in the popularity of private solar farms on Rarotonga.

Development[14]

In late 2017, the Organisation for Economic Co-operation and Development (OECD's) Development Advisory Committee (DAC) will determine if the Cook Islands will graduate to a high-income country status. The Cook Islands, as a country, recognizes its ability to graduate to high-income status in the medium term. Whilst such potential graduation remains a very important national milestone, it also implies that the Cook Islands may become ineligible to receive ODA funds. Development partners may be assured of the Cook Islands' willingness to improving its domestic resource mobilization but faces the difficult challenges of a Small Island Developing State (hereafter SIDS). There are significant vulnerabilities that seriously impede the Cook Islands' sustainable development such as scale, isolation, and the negative impacts of climate change and disasters. Unfortunately, such factors remain relevant obstacles at present and most surely in the future. Specifically, in the Intended Nationally Determined Contributions (INDC), the Cook Islands reaffirmed it can deliver 100 per cent of its adaptation measures and strengthen capacities in all its inhabited islands conditional on external support.

The Cook Islands will continue working through appropriate diplomatic channels to contest the assessment and to remain an eligible and trustworthy recipient to ODA support as well as any other forms of official support for development. The Cook Islands believes that a change within its ODA eligibility status would, without doubt, increase its vulnerability and exposure to ongoing economic, social and climatic threats, and its ability to fund critical infrastructure, thus undermining its ability to recover from these threats and ensure its sustainable development. It would also impact on the Cook Islands ability to adapt to climate change.

Development tools and initiatives to improve planning in the Cook Islands:

[14] Cook Islands Government, Budget estimates 2016/17 and 2017/18, Book 1, Appropriation Bill, Appropriations and Commentary

- The Te Tarai Vaka activity management system (TTV) complies with standards for direct access to global funds continues to be rolled out to wider government including capacity building for government decision making bodies to better enable 'quality at entry' reviews of new initiatives and appropriate monitoring and evaluation of existing programs.
- Implementing the ten year capital plan, National Infrastructure Investment Plan, highlights national programmes and plans for climate adaptation, renewable energy and ICT.
- Development Partners Meeting moves to biennial with a renewed focus on engagement strategies that orient partner funding towards Cook Islands programs rather than project level interventions that duplicate national systems; with an intended focus on Pa Enua access to development funding.
- Application to achieve National Implementing Entity status with the Green Climate Funds will channel climate change funding direct to the national budget process and funding for positions to better prepare Cook Islands to engage with and establish a pipeline for climate change finance.

Programme Objectives:

The objective of the programme is to "build and implement an integrated approach to further increase the adaptive capacity of remote island communities and ecosystems to disaster risk and climate change impacts".

It is this objective that is further developed in Part III F and demonstrates how the programme/project aligns with the Results Framework of the AF.

The sub- objectives for the programme have been identified below:

- Strengthening national and local capacity for monitoring and decision making to respond and to reduce risks associated with climate change
- Establishing climate resilient water management instruments using integrated and community based approach.
- Raising awareness and establish a knowledge exchange platform to increase adaptive capacity to revitalise agriculture production systems

Programme Components and Financing:

Table 2: Programme components, activities, expected concrete outputs, and the corresponding budgets

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
1. Strengthening disaster risk governance to manage disaster risk and enhancing disaster preparedness	1.1 Expanded GeoPortal Disaster Risk Management Information System 1.2 Management response tools linking hazard risk assessments and the DRM	Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic,	529,754

Project/Programme Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
for effective response to “Build Back Better” in recovery, rehabilitation and reconstruction	Plans 1.3 Robust Pa Enua DRM Plans and capacity building	structural, legal, social health, cultural, educational, environmental, technological and institutional data.	
2. Integrated water security management planning and implementation	2.1 Robust water monitoring, reporting and assessment systems established and implemented 2.2 Water Resilient Plans including drinking water safety practices 2.3 Allocation of Water Security Fund	Strengthened drinking water security including increased institutional capacity and coordination for integrated water management	735,731
3. Revitalised agricultural production systems strengthening island food sources and livelihoods in the Pa Enua	3.1 Island plant and seedling nurseries 3.2 School gardens for the northern group islands 3.3 Tropical orchards technical support for southern group islands 3.4 Pa Enua Agriculture Knowledge Sharing Platform 3.5 Allocation of Economic Resilience Fund	Increased island food security resilience and preparedness for disasters	1,236,730
6. Project/Programme Execution cost			262,581
7. Total Project/Programme Cost			2,764,795
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			234,330
Amount of Financing Requested			2,999,125

Projected Calendar:

Table 3: Milestones for the proposed programme

Milestones	Expected Dates
Start of Project/Programme Implementation	July 2018
Mid-term Review (if planned)	January 2020
Project/Programme Closing	December 2021
Terminal Evaluation	September 2021

PART II: PROGRAMME JUSTIFICATION

A. Programme Components

The Cook Islands economy is not generating adequate resources for the Government to fund adaptation and therefore is unable to address climate change adaptation measures. As outlined in the country's INDC it can deliver 100 percent of its adaptation measures target, conditional on external support. In order to achieve the project objective "build and implement an integrated approach to further increase the adaptive capacity of remote island communities and ecosystems to disaster risk and climate change impacts" this programme has been structured to deliver concrete adaptation interventions with tangible outputs that will help Pa Enua communities to adapt and address climate change, disaster risk management, water resilience and food and economic security issues.

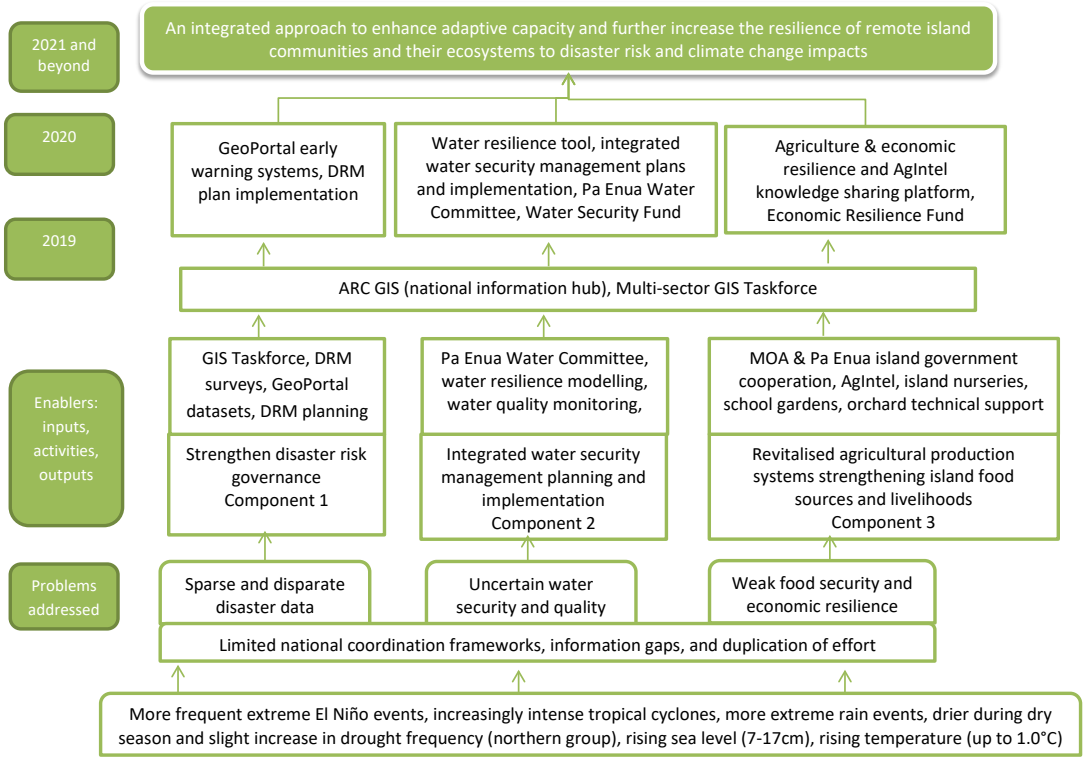
The proposed programme comprises three components or projects that are essentially a series of synergistic projects that will contribute to the overall increase in resilience in a way that demonstrates cost effectiveness and efficiency. In the development of this proposal and the programme components that follow, it was evident that there continues to be limited national coordination of information, information gaps and duplication of effort. Therefore an essential overarching requirement for this AF proposal will be to effectively manage information flows to ensure that there are improved outcomes, essentially to ensure that the Cook Islands are better prepared in reducing risk and managing resources. For the successful implementation of this programme, there will be a requirement for high quality, timely, accessible statistical information for evidence-based policy formulation, good decision-making, development of management tools and knowledge sharing for each of the components and to monitor programme progress. **Figure 45** is the Programme Logic that identifies the problem to be addressed at the base of the diagram, the enablers and inputs required for each component shown at the next level. The information flows upwards of the diagram to the central information hub, ARC GIS, and then further to individual sector portals for each component will support the achievement by 2021 and beyond - an integrated approach to enhance the adaptive capacity and increase the resilience of the Pa Enua. Each programme component has a number of outputs which are distinct areas of concern that will be managed by each of the agencies or ministries identified.

How the information flows are managed and implemented is developed and clarified under each component. The strategy for implementation of the programme logic diagram will follow the vision, mission, core values and objectives as outlined in the Cook Islands Strategy for the Development of Statistics (CSDS)[15]. The initial sector assessments that followed the adoption of the CSDS provided the strategic planning framework for all agencies producing and using statistical data and its

[15] The development of this strategy was officially endorsed by Government in 2013 giving recognition to the importance of having a sound and modern statistical system in place to cater to these needs. CSDS will guide the National Statistical System (NSS) for the next ten years, from 2015-2025.

implementation will result in the timely and regular supply of important information to facilitate evidence-based policy development to help improve people's lives. The CSDS highlights the need for more and better coordination together with the need for a central access point for statistical information and analysis in light of scarce resources for data collection and limited capacity in data analysis. **Figure 46** outlines the need for a central access point (ARC GIS) that will provide a central platform for all users.

Figure 5: Programme Logic Framework



More dialogue and understanding is needed between users and producers of statistical information and this will be facilitated by the GIS Taskforce. An issue related to this is the need for harmonising standards and definitions across surveys conducted by different organisations to make the results comparable and increase the usefulness of the information. AF resources will ensure a coordinated approach and a national integrated information platform is implemented in line with the objectives of the CSDS.

Component 1: Strengthening disaster risk governance to manage disaster risk and enhancing disaster preparedness for effective response to "Build Back Better" in recovery, rehabilitation and reconstruction.

Outcome: Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social health, cultural educational, environmental, technological and institutional measures.

Emergency Management Cook Islands (EMCI) manages an emergency management Geographic Information Systems (GIS) database – the Cook Islands Geo Portal is a functional and comprehensive repository of Disaster Risk Management (DRM) data and information. This database consists mainly of shape-files, feature classes, database tables and raster layers with associating DRM documentation such as outer islands DRM plans. The methodology utilized to capture and record field data involves a combination of Global Positioning System (GPS), Unmanned Aircraft System (UAS), digitization and ground truthing by carrying out household DRM surveys using mobile apps. A GIS tracking tool will be used to capture the adaptation activities and report on the learning and knowledge management.

Carrying out household surveys using GIS mobile apps technology will enable DRM surveyors to capture DRM data in the field. A data dictionary has been created to facilitate capturing of data on locations of vulnerable households and vulnerable citizens. This data dictionary will be uploaded to the Cook Islands Arc GIS portal from offline mobile devices containing Arc GIS Maps. Geo Spatial analysis/data and information will be accessible on the EMCI Geo Portal. Prior to field surveys, the DRM surveyors will be trained in the use of the GIS mobile devices and conduct mock mapping exercises. Training has already taken place with several household surveyors using paper-based material, to enable spatial mapping of the household surveys conducted for the DRM. However, survey and analysis will be a lot more efficient with the use of offline mobile apps that contain GIS applications providing DRM users with data input and updates of the existing GIS DRM database.

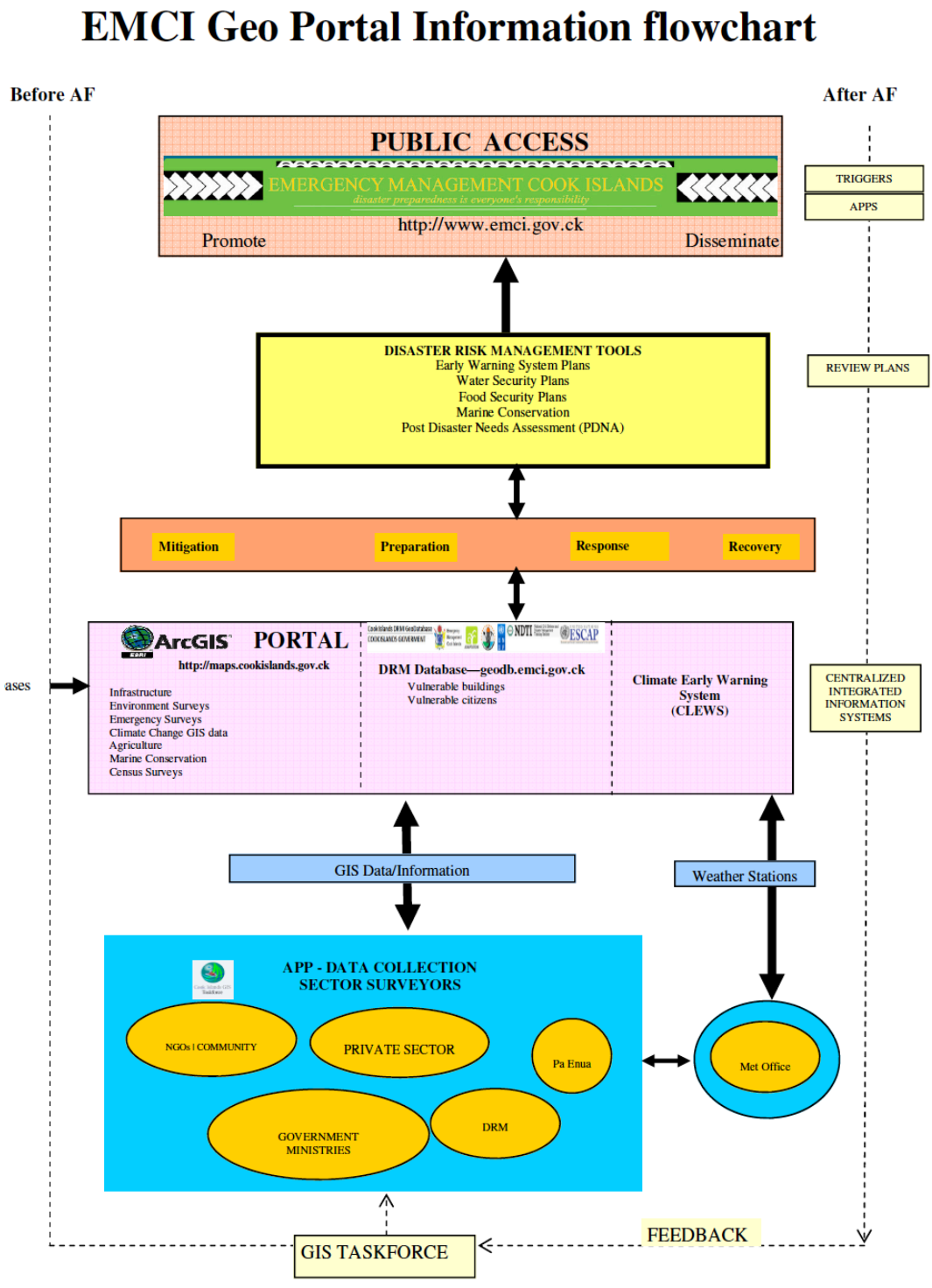
The DRM surveyors will also be collecting qualitative information of households. This will include issues or concerns relative to DRM/Climate Change not captured within the quantitative questions. This information will be transferred and stored in an online database (accessible only for DRM managers). In addition, each entry in the database will have a unique reference code that will coincide with the reference codes established using mobile app devices. GIS will allow for the entries in the feature class to be linked to the online database, thereby transferring all relevant data to the GIS. Analysis and querying of this data will then be conducted.

EMCI is the central agency for DRM and therefore its main role revolves around the development of plans and sub-plans for DR and DM. The issue currently is that the plans cannot be developed in isolation and therefore must build on existing information such as census data, GIS data etc. as well as sector planning tools already in place. AF resources will support a centralised integrated information system with oversight from the GIS Taskforce and the following EMCI GeoPortal Information Flowchart (Figure ~~5~~6) has been adopted as the foundation, to ensure that from data collection from the various sector surveyors including water and agriculture, either using apps or manually are fed into one central data system. This includes the information from the Meteorological Service weather stations, funded under SRIC on each of the islands.

The data information will then be filtered and enable management tools, apps and early warning systems (Triggers) to be developed that will support the implementation, response and recovery plans already in place. There will be an EMCI public portal and training the users of the public portal in the Pa Enua will be

essential. The Trigger Apps will reduce disaster risk, ensure it is coordinated, consistent and effectively managed and the feedback system ensure continuous

Figure 6: EMCI Geo Portal Information Flowchart



review of the plans and further improvements of the information system as recommended by the GIS Taskforce.

The last output of this component will be the ability to conduct spatial analysis and create maps that can be included in periodic reports. This will contribute to the monitoring and reporting by tracking progress, and will strengthen the scientific foundation of the learning and knowledge management under this component. Sensitive information will be protected in accordance with EMCI and GIS Cook Islands Taskforce group regulatory body and as determined by the GIS Taskforce.

This component has an integrated approach and builds on and heightens the Akamatutu'anga no te tuatau manakokore ia e te taui'anga reva – Strengthening the Resilience of our island and our communities to climate change (SRIC). It is designed to further reduce exposure and vulnerability thus preventing the creation of new disaster risks. Disasters, many of which are exacerbated by climate change and which are increasing in frequency and intensity, significantly impede progress towards sustainable development. Evidence indicates that exposure of person and assets in all countries has increased faster than vulnerability[16] has decreased, thus generating new risks and a steady rise in disaster related losses, with significant economic, social, health, cultural and environmental impact in the short, medium and long term, especially at the local and community levels. Recurring small-scale disasters and slow onset disasters particularly affect communities like those in the Pa Enua of the Cook Islands, households and the few and small Pa Enua enterprises, constituting a high percentage of all losses.[17] It is therefore urgent and critical for the Cook Islands to anticipate, plan and reduce disaster risk in order to more effectively protect persons, communities, their livelihoods, health, cultural heritage, socioeconomic assets and ecosystems, and thus strengthen their resilience.

While some progress in building resilience and reducing losses and damages has been achieved through the development of Island Disaster Risk Management Plans and the Cook Islands National Disaster Risk Management Plan 2017 little else has been possible. This is because substantial reduction of disaster risk requires perseverance and persistence with a more explicit focus on people and their health and livelihoods and regular follow-up. Lack of funding has been the major impediment. Building on these plans will require extra emphasis on substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses and communities. This component will develop a stronger commitment and involvement with political leadership at all levels in the implementation and follow-up of activities and the creation of the necessary enabling environment to ensure a reduction of disaster risk. In order to reduce the level of risk for the identified hazards in the JNAP it will be important that this component follows closely the Sendai Framework for Disaster Risk Management 2015 – 2030, noting the guiding principles and priority actions and activities that will support the achievement of reducing the high and medium level of risk for the hazards identified. It must also be consistent with NSDP Goal 13 Strengthen resilience to combat the impacts of climate change and natural disasters, which promotes resilient communities as well as enhancing protection from cyclones and building resilient infrastructure. Therefore this

[16] Vulnerability is defined in the Hyogo Framework for Action as "the conditions determined by physical, social economic and environmental factors or processes which increase the susceptibility of a community to the impact of hazards".

[17] United Nations Sendai Framework for Disaster Risk Reduction 2015-2030

Component 1 will need to combine the integrated information systems with activities within each of the three major outputs with priority activities identified as follows:

Output 1: Expanded Geo Portal Disaster Risk Management Information System that will support a coordinated response for high level hazard risk assessments

Policies and practices for disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be leveraged for the purpose of pre-disaster risk assessment, for prevention and mitigation and for the development and implementation of appropriate preparedness and effective response to disasters.

There is a paucity of accurate baseline data and information to support informed decision-making on matters of disaster risk reduction and by extension on sustainable national development. EMCI will co-chair, a newly formed GIS Taskforce[18] which includes Government agencies that are responsible for producing GIS information. This centralised medium is the Arc GIS Portal (Figure 46) hosted by the Cook Islands Investment Corporation (CIIC) with operational oversight with the Office of the Prime Minister Information Systems Division. The Arc GIS Portal will facilitate and enhance the use of GIS maps in government (for example the use of offline apps to collect GIS data in the outer islands). All disaster risk information is derived from the ArcGIS Portal and streamlined to EMCI GeoPortal where information can either be publicly available or for restricted use (e.g. eyes only for disaster responders). This will establish a national risk database that will require ongoing support from partners and Government.

This comprehensive baseline data and information will include risk assessments, modelling and mapping, post-disaster physical, socio-economic, and environmental damage and loss assessments across all sectors such as agriculture and tourism and lifeline services such as water, to inform decision making and build resilience. There will also be a requirement to incorporate best practices and lessons learned from traditional DRM practices with applied scientific and technical methodologies and approaches.

The Pa Enua of the Cook Islands is challenged by the physical remoteness of many communities in terms of developing and supporting end-to-end multi-hazard early warning systems appropriate and sustainable for the Pa Enua islands and the country. In this regard there is a need for increased investments in community preparedness, and to continue support for relevant technical agencies such as national meteorological and hydrological services, and as well to identify new and innovative approaches through dialogue and exchanges with our partners. In consultations held between March 2016 – April 2017 by the Pa Enua Division of the Office of the Prime Minister on the islands of Mitiaro, Mangaia, Atiu, Mauke and

[18] GIS Taskforce first meeting was in June 2017 with the aim of encouraging capacity building of GIS in the community;
And to establish a network of GIS support both technical and administrative. The goal is to encourage GIS information sharing amongst ministries and stakeholders. This information may contain DRM related information such as household buildings, residents and infrastructure data. The information will lead to the development of DRM management tools, such as early warning systems, first responder plans, evacuation plans, cyclone emergency plans, drought plans, etc.

Penrhyn Islands, participants recognised that the island is not really prepared and ready for hazards such as droughts and cyclones and this programme will ensure the island is better prepared. It was at these meetings and consultations that data is gathered to update the GeoPortal.

An Emergency Management/GIS Specialist will be contracted to support the essential work required to support the implementation of this component. The planned activities to achieve this output will increase the ability to systematically gather, analyse and disseminate sector-tailored climate information, including the monitoring of climate impacts on terrestrial, marine, coastal and human systems that constitute the economic and social base of the country. This work will build on and integrate climate and related monitoring already being undertaken by partner agencies such as the National Environment Service, Cook Islands Red Cross and the Meteorological Service. The priority areas and tasks of the Emergency Management/GIS Specialist will include:

- Convene a National Meeting for DRM in Year 1 to confirm the 3-year work plan for this Component 1.
- Standards and information sharing:
    - Promote the collection, analysis, management and use of relevant data and practical information and ensure its dissemination, taking into account the needs of different categories of users as appropriate.
    - Encourage information sharing and coordinate the development of maps
    - Support and coordinate the GIS Taskforce Committee meetings encouraging members to help each other to resolve technical issues and facilitate the transfer of technical knowledge amongst taskforce members
    - Identify opportunities for GIS capacity building in-country, within the region or international groups that may support the development of GIS in the Cook Islands.
    - Encourage the establishment of necessary mechanisms and incentives to ensure high levels of compliance with the existing safety regulations and laws, including addressing land use and urban planning, building codes and environmental and resource management and health and safety standards.
- Geo Portal
    - Maintain and monitor the DRM Geo Portal to enhance DRM response in the Cook Islands
    - Continuously monitor and maintain GIS and SDI database including DRM and Climate Change related information and projects are readily made available and accessible on the Geo Portal to decision makers
    - Continue to collate GIS and SDI data and information from the various ministries, government agencies, regional partners
    - Upload DRM related GIS information from government ministries to the Geo Portal.
- Develop mobile applications relative to the collection of GIS data collected in field surveys
- To adopt and implement national and local disaster risk reduction strategies and plans across different timescales, with targets, indicators and timeframes
- Coordination of information from Component 2 and 3.

Quarterly reporting to the GIS Taskforce will be required to monitor the progress of the Specialist's work as well as progress of the Geo Portal Information system.

Output 2: Management response tools that will link hazard risk assessments and the DRM Plans

A fully developed Geo Portal Disaster Risk Management Information System will enable the development of management response tools and/or early warning systems that will link the hazard risk assessments and the DRM Plans. A prerequisite and precondition is to ensure that the information is comprehensive and to identify climate early warning needs, by sector and by island. This could be completed by using a questionnaire, which will be sent to relevant government agencies, non-governmental organisations, the private sector and Pa Enua leaders and administrators and for the Disaster Management/GIS Specialist to coordinate the information from the various sectors such as the detailed requirements for water on each of the islands, agriculture and health. This will mean that the information and modelling can be completed in the Geo Portal to trigger early warnings and likely hazard events and associated level of risk to the community or property at any point in time. It will also be possible for the Disaster Management/GIS Specialist to review and recommend appropriate technological early warning options for high priority vulnerable persons or areas.

The information will initially be stored in the government Arc GIS Portal and then accessed through the Geo Portal or the relevant sector portal where the products will be tailored to the needs of users (e.g. national and island level government officials, extension officers, farmers, communities, local businesses) in sectors such as agriculture, tourism, health, and water. The enhanced climate and weather information products and services will be developed through the GIS based early warning and climate information system by overlaying climatic variables with sector-relevant information, such as agro-meteorological information (e.g. soil, moisture holding capacity, land cover, topography, land use and relevant climate variables), water availability and health related information. Other activities by the Disaster Management/GIS Specialist include:

- Knowledge transfer on the implementation of the Cook Islands information in the Geo Portal
- Create awareness and encourage active participation in the development and implementation process to enhance GIS data in the ownership, sustainability and maintenance.
- Identify useful apps to enhance the development of the Geo Portal
- Identify open source or commercial based apps that can be used to enhance the Geo Portal, through the collection of DRM GIS data.
- Support the development of the GIS community
- Encourage the development of GIS maps within government ministries, NGO's and key stakeholders.

It will be possible to develop monthly outlooks, seasonal forecasts, and longer-term indications of weather patterns. The management tools will include relevant materials that will be prepared in Cook Islands Maori. Communication and distribution systems will be established and maintained.

The observational and related data management capacity of the Meteorological Service will be further enhanced in climate data observation with the installation of Climate Early Warning Systems ~~on the islands of Nassau and Suwarrow, which were excluded under an earlier SRIC programme.~~(CLEWS) on the islands of Nassau and Suwarrow, which were excluded under an earlier SRIC programme. There are six (6) Automatic Weather Stations established in the Pa Enua. There are three (3) in the northern group (Penrhyn, Manihiki and Pukapuka) with none of the weather stations operational due to lack maintenance. Among three AWS in the southern group (Aitutaki, Mauke and Mangaia), Aitutaki is the only weather station that is operational. All weather stations require annual recalibration and these have not been renewed. Also, there are issues with broadband connections and therefore information was not being transferred as required.

The SRIC programme is currently installing CLEWS on each of the southern and northern group islands alongside the established weather stations. The southern group installations will be completed by October 2017 and northern group by January 2018. Testing of the system is currently being completed on Rarotonga with two CLEWS installed at Titikaveka and the Rarotonga Meterological Service office.

The benefits of CLEWS will be hourly data collection for windspeed, wind direction, temperature, relative humidity, air pressure and rainfall. During an emergency, this information can be provided on demand. This information will be transferred through broadband and when the network goes down it will automatically transfer information via satellite link.

Output 3: Strengthened Pa Enua DRM Plans.

The steady growth of disaster risk, including the increase of people and assets exposure combined with the lessons learned from past disaster, indicates the need to further strengthen disaster preparedness for response, take action in anticipation of events, integrate disaster risk reduction in response preparedness and ensure that capacities are in place for effective response and recovery at all levels. Empowering women and persons with disabilities to publicly lead and promote gender equitable and universally accessible response recovery, rehabilitation and reconstruction is key. Disasters have demonstrated that the recovery, rehabilitation and reconstruction phase, which needs to be prepared ahead of a disaster, is a critical opportunity to "Build Back Better"[19] including making nations and communities resilient to disasters.

It is now understood internationally that building safety and resilience is a long-term, continuous process that requires ongoing commitment therefore there is much that can be done to adapt to future problems and challenges by building on current knowledge. It is also understood that being disaster resilient means that there is a greater chance of also meeting development goals which, in themselves, will greatly add to safety and resilience.

[19] Alignment to Priority 4 of the Sendai Framework for Disaster Risk Management 2015 – 2030

With the development of management response tools and/or early warning systems there will be a need to further ensure that communities understand the early warning systems, what needs to be done and the responsibilities of the various people on the island.

Combined with the Cook Islands Red Cross and the International Federation of Red Cross and Red Crescent Societies (IFRC) Strategy 2020, communities will be more determined to move forward in tackling the major challenges that confront the Pa Enua and seeks to benefit all. The Strategy 2020 also provides a practical guide to Gender sensitive approaches for Disaster Risk Management and this will guide the training requirements for this training and capacity building component.

During implementation of this output, EMCI will work closely with government agencies such as the Ministry of Health, Education and Agriculture as well as Cook Islands Red Cross to extend and review the DRM plans on each island to ensure that they are aligned with the Cook Islands National Disaster Risk Management Plan 2017. The Cook Islands Red Cross carried out a pilot activity in Atiu in partnership with EMCI, which will be replicated in all other islands of the Pa Enua under this component. Specific activities will include:

- Surveying and collating of data on each island, which will be included on the GeoPortal.
- Review, coordination and organizational structures at Island level to ensure that they are consistent with the Cook Islands National Disaster Risk Management Plan 2017
- Provide training to the in-country users of the Geo Portal.
- Review and update operational manual for the use of the Geo Portal
- Facilitate proper training workshops for the use of the Geo Portal across all sectors and the Pa Enua
- Facilitate GIS training on a one-on-one basis to build software capacity linked to the Geo Portal.
- To assign as appropriate clear roles and tasks to the community including the Executive officer, Island Council and Island Government employees and establishing disaster teams – ensure the full involvement of women and men as well as marginalized groups in the decision making process
- Carry out systematic gender analysis of the different roles, responsibilities and socio economic status of men, women and other household members.
- To develop and strengthen the ability and mechanisms to effectively use community knowledge and experience and to build on skills that are within the communities in particular the participation of women and men in the development of community based early warning systems.
- Identify strengths and weaknesses within the community and respond to community driven priorities that will strengthen both male and female participation in activities such as risk mapping enable gender perspectives of risks and vulnerabilities to be identified through processes such as Vulnerability and Adaptation (V&A).
- Promote proportional representation of women and men in preparedness activities as well as involving them actively in the planning, design, construction and maintenance of mitigation works.

- Promote national and island wide local public education and awareness in disaster risk information and knowledge through campaigns, social media and community mobilization.

Training materials, noting the most vulnerable, will be developed specific to the islands and their requirements. Monitoring will be undertaken at least once a year during the cycle of the project and back to office reporting will provide feedback on progress and results of how effective the systems have been.

Component 2: Integrated Water Security Management Planning and Implementation

Outcome: Strengthened water security including increased institutional capacity and coordination for integrated water management.

This component has global linkages and will support compliance with Sustainable Development Goal (SDG) 6: Ensure availability and sustainable management of water and sanitation for all and SDG 6.1 by 2030, achieve universal and equitable access to safe and affordable drinking water for all 6.2 by 2030, achieving access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those vulnerable situations.

Pacific Ministers of Health have endorsed a Healthy Islands Vision "ecological balance is a source of pride: proportion of population with access to improved water sources".

The Cook Islands National Sustainable Development Plan (NSDP) 2016-2020 has Goal 4: Sustainable management of water and sanitation and 4.1: percentage of population with access to sufficient and safe water in their homes; and 4.2: percentage of properties using sanitation systems that meet approved standards.

Other Cook Islands policies that are relevant in the implementation of this component include the National Water Policy 2016, which includes using water sanitation plans, as well as addressing water sources, and standards as well as testing procedures. The Cook Islands Sanitation Policy 2016 provides for the safe disposal of sewage and other wastewater; and the promotion of health and hygiene practices in the Cook Islands.

This component is consistent with the above policies and targets the Pa Enua of the Cook Islands which has a high degree of exposure to climate variability and change characterized by increasing temperatures and drought frequency similar to current levels or increasing slightly in the northern group (and getting drier during the dry season) under the high emission scenario. The recent droughts in the Cook Islands are nothing new however, these droughts have tested the remote and Pa Enua small communities' innate resilience escalating demand for water. It is internationally acknowledged the pivotal role that water and sanitation plays in disaster risk management and climate change adaptation, and this component is seeking to

strengthen national coordination frameworks to enable integrated management of water and sanitation, disaster risk management and climate change adaptation.

The Pa Enua face particular challenges in securing adequate supply of water, with the small communities spread over vast distances, limited and fragile water resources, limited human and financial resources, and a heightened vulnerability to climate variability and natural hazards such as severe drought and cyclones. Currently the water sector in the Pa Enua is managed by each island Government with no central agency and no co-ordinated cost effective implementation of water infrastructure across the islands. Water infrastructure has been driven in an ad-hoc manner by government and development partners. Whilst Infrastructure Cook Islands (ICI) provides technical advice when requested, sometimes this is not sought or they are not included in the project planning phase.

These base challenges have resulted in inappropriate water use and wastage, inadequate planning and preparedness, poorly configured and maintained infrastructure, under exploitation of surfaces suitable for rainwater collection, inadequate awareness, and inadequate information and understanding of resource constraints on the Pa Enua. As a result their water security is at risk.

This component will expand through further consultations in the southern and northern groups the island-level drought response plans that were developed under the SPC Strengthening Water Security of Vulnerable Island States[20] and the GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit, the German Federal Enterprise for International Cooperation) projects[21]. It will also take note of the current work that has been completed by Government agencies as well as Cook Islands Red Cross training programmes that supports and builds on the combined effort of various partners to support and move towards achieving the NSDP Goal 4[22] of sustainable management of water with the minimum standard being 80 litres per person per day and water access is having a running water within a household.

These efforts and complementary programmes include:

- Drinking water safety plans have been developed for Rarotonga and Aitutaki with World Health Organization (WHO) support. Roll out to all islands, both community and household water supplies, can take advantage of the experiences and expertise of the Cook Islands public health inspectors and TA support provided by WHO.
- The Cook Islands National Water Policy 2016 brings together government policies for water resources management, infrastructure, water supply, drinking water safety planning and sanitation into a single document. The policy, through its implementation plan, includes several objectives that connect directly to strengthened water security, including coordinated water quality monitoring, reporting the results of water quality testing to the public, establishment of drinking water standards, promoting drinking water safety planning, catchment

[20] Project is a 5-year NZD$5million project funded by the New Zealand Ministry of Foreign Affairs and Trade. Implemented by the Secretariat of the Pacific community (SPC) across the Pacific Island Countries of the Cook Islands, Kiribati, Republic of the Marshall Islands, Tokelau and Tuvalu.

[21] Northern Water Project Phase 2 for the islands of Penrhyn, Nassau and Palmerston implemented by the Pa Enua Governance Unit & Climate Change Cook Islands, Office of the Prime Minister, Government of the Cook Islands.

[22] Te Kaveinga Nui National Sustainable Development Plan 2016 – 2020, Government of the Cook Islands, The Office of the Prime Minister

protection of sources of drinking water, community awareness especially around water conservation, resilience of water supply to climate change and natural disasters, and training and capacity building.

- A good level of awareness of Climate Change Adaptation programme activities within Government and Non-Government organisations has been established as exemplified in the consultations that have occurred over the last two years
- Water infrastructure, household and community storage tanks provided through the implementation of Akamatutu'anga I te iti Tangata no te tuatau manakokore ia e te taui'anga reva Strengthening the Resilience of our Islands and our Communities to Climate Change (SRIC – CC) will be further strengthened.

This component will require contracting a Water Security Engineer with knowledge of small island water related requirements, who will be responsible for the following:

- Ensuring the co-ordination of this component with the ongoing work of Infrastructure Cook Islands (ICI), the SPC Strengthening Water Security of Vulnerable Island States programme in the Pa Enua, as well as any other water projects which develop during the project timeframe, in order to reduce overlaps and duplication of efforts.
- Reporting directly to the Water Committee[23], which was established under the GIZ project to provide a comprehensive oversight of the Pa Enua water sector. It was agreed during the development of this component that the committee's role should be extended to be responsible for supporting and monitoring this Component 2.
- Providing technical expertise to ensure the completion of the outputs in line with international best practice standards.

This component has three major outputs. It should be noted that these are closely matched with the outputs of the SPC Strengthening Water Security of Vulnerable Island States programme, because of the importance of the outcomes to the water security of the Pa Enua:

Output 1: Robust water monitoring, reporting and assessment systems established and implemented

Important activities that will be carried under Output 1 include:

- The Cook Islands Geo Portal has links to various meteorological websites that monitors Cook Islands weather systems that will be managed by the Meteorological Office. The Water Committee and GIS Taskforce need to add a current water supply profile and a water security data layer to the Cook Islands Geo Portal on behalf of the Pa Enua communities. This will enable sharing of the data with all agencies working within the Water Sector
- The Water Security Engineer will assist with ensuring that water monitoring data such as water storage and quality levels is maintained. The completeness and comprehensiveness of data sets, knowledge of the existence of datasets, gaining

[23] Members of the Water Committee are: Chief of Staff, Office of the Prime Minister, Representatives from Infrastructure Cook Islands, Climate Change Cook Islands, Ministry of Health, Development Cooperation Division, Ministry of Finance and Economic Management, and Pa Enua Division and Civil Society, NGO and/or Red Cross

access to datasets and reporting using one multi-sector[24] monitoring programme and providing training in its implementation on each island is essential. This could be the national water security data warehouse that supports sharing information and shared actions that could be part of the current Geo Portal. This would also need to include GIS positioning of the water infrastructure and its condition. The water security data will form the foundation for the development of design management tools to assess and anticipate impacts of drought on drinking water supplies and early warning systems for the Pa Enua. This is currently managed manually on a monthly basis by the Pa Enua Division. The water baseline will be determined during project inception.

- Mechanism to retrieve and update details established on individual islands.

Output 2: Water Resilient Plans including drinking water safety practices

Drinking water safety planning as a concept is not new to the Cook Islands. However, its widespread adoption and turning water security plans into action are limiting its potential to improve the provision of safe drinking water. Implementation is limited by the capability within the Cook Islands to deliver an on-going nation-wide programme. Implementation (i.e. taking practical steps to reduce the sources of contamination and practical options to treat contaminated water) is hindered by the knowledge of what practical steps to take, accepting who is responsible for taking the practical steps, and the cost to make repairs and improvements. Developing a national drinking water safety planning programme and building the national and local capacity to deliver on the plan is a primary role and important first steps of this component.

Water security plans cover water quantity and quality involving supply (water catchment and distribution infrastructure), usage (drinking, cooking, sanitation) and disposal (wastewater, recycling). The activities to be carried out under this output include:

- Completion of Water Security Plans will involve:
    - As complementary projects conclude, there will be a need to review water management plans and Island drought plans e.g. the GIZ project will complete repairs to eight community tanks and two catchment buildings, which will improve water resilience for each of the northern group islands identified. The Water Security engineer will support the review of the plans and water security data from Output 1 will be an important input for the Water Security Plan.
    - Adopting the WHO drinking water safety planning approach to provide adequate water even in time of drought and support protection of drinking water sources from contamination.
    - Assessment of water infrastructure by Water Security Engineer:
        - For more complex repairs, this will be assessed and recommended by the Water Security Engineer to the Water Committee with detailed costings and if sufficient funds these will be paid for from the Water Security Fund

[24] Multi sector monitoring suggests the need to have one Government database that will provide information to and for multi purposes in the various sectors of the economy.

        - Discussions with Island Governments will also provide the Water Security Engineer with the opportunity to reassess the current water catchments/infrastructure and make recommendations for further investments in water catchments if required.
- Capacity building of Pa Enua to implement the Water Security Plan will involve:
    - In collaboration with the Ministry of Health and Red Cross, a water quality testing programme is introduced to all islands. Water testing toolkit training is ongoing in collaboration with the Water Security Engineer.
    - Community education and training programmes will be delivered for communities to support more resilient water infrastructure by the Pa Enua Division of the OPM. Ministry of Health as well as Red Cross Cook Islands will continue to work with the Pa Enua Division to deliver training in water, sanitation and hygiene promotion (WASH) programme that includes:
        - Water conservation such as their tank water; hygiene of catchment (roof and down piping etc.) if necessary the replacement of guttering, down pipes etc. When in an emergency clean water is needed, Red Cross is able to deploy the NOMAD water purification units. This machine includes testing for water quality however have been shown to be of limited use in the Cook Islands.
        - Sanitation – promoting/advice on good sanitation and if required in an emergency response providing temporary toilets.
        - Hygiene promotion – hygiene practices around water storages, promoting water conservation and hand washing in school. Red Cross has in the past supported these programmes with water containers and soap for the handwashing programme.
    - Local knowledge is essential in water, sanitation and hygiene training. Commitment at a village level and island Governments is imperative for continuity and if the training is to be successful. In all cases, life-saving knowledge and skills live on after the training ends. Identifying community based organisations including women in the community who will champion training and ensuring that schools are implementing the training as required. Churches play and important and influential role in Pa Enua communities and therefore discussions on water and hygiene could be included within this group.
    - Community level training of basic maintenance and repairs on residential water tanks (e.g. leaking taps, damaged guttering and spouting and other simple repairs that can be undertaken by unskilled personnel)

Output 3: Allocation of Water Security Fund

The Water Security Fund ~~will provide opportunities~~ has been identified in order to

- Apply the water management tool to inform water investment decisions as well as determine potable water requirements for each island in the Pa Enua in terms of understanding "what is meant to be water resilient"
- Use the data collected in Output 1 to determine priority water infrastructure investments when there are limited funds available.

The Water Committee ~~who~~ will administer the fund ~~to assess during year 1 of the Programme the most important water investment requirements as identified~~with the assistance and ~~recommended by~~ recommendations from the Water Security Engineer. ~~The following activities have already been identified~~ The criteria that will determine water investments include:

Eligibility

1. Projects related to water infrastructure from sourcing, distribution, storage and disposal covering both water quantity and quality
2. Located in the Pa Enua for the benefit of Pa Enua population
3. Project proponents include government (island administration or national agency), community organisations, and NGOs (Red Cross)

Mandatory requirements (non-compliance in any one will ~~be prioritised in the~~disqualify a project)

1. High priority investment as identified by water resilience modelling
2. Alignment with island water security management plan
3. Alignment with national policy on water and/or sanitation
4. Compliance with island or national environmental policy
5. Compliance with AF ESMP and Gender Policy particularly benefits for vulnerable groups and cognizant of gender considerations

Optional requirements (to be used to rank/prioritise projects)

1. Priority ranking in water resilience modelling
2. Balanced allocation of ~~this fund noting that~~funding among Pa Enua islands
3. Sustainability of the ~~current activities exceeds~~benefits of the ~~funds available~~project

Likely identified water investments include:

- Repairs to 45kL concrete community tanks around existing community “fare vai” (water houses) on the islands of Manihiki and Rakahanga
- Construction and installation of 20kL concrete tanks around big sized buildings that are built or are being constructed by Government e.g. Machinery buildings etc. The following water infrastructure list has been identified for each of the northern group islands:

Island	New Tanks
Palmerston	6
Nassau	6
Pukapuka	10
Penrhyn	10
Manihiki	8
Rakahanga	0

- Two existing water community buildings on Manihiki that were damaged by cyclones or have fallen into a state of disrepair need to be repaired as a matter of urgency.
- Training materials and educational water toolkits to be used in the training and consultation in the Pa Enua

- Prioritising further water storage investments on each island that will ensure water security and resilience targets are met as determined by the Water Management Tool developed in Output 1.

Detailed costing for each of the activities in Output 3 will be completed during the Inception phase and Year 1 and prioritising for implementation by the Water Committee. The proposed criteria for the Water Resilience Fund will be further developed during Inception phase.

Estimated costs only have been provided in the detailed budget. During the inception phase the final amount to be distributed for this fund will be confirmed and by Year 2 the prioritisation of expenditure allocations should be identified and confirmed by the Committee. Implementation should occur soon after.

This component has been developed based on findings from all consultations held over the past three years during the preparation and implementation of complementary water projects – i.e. water security remains a high priority for the communities of the Pa Enua. They recognise the cross cutting issue that access to water is critical for their development with profound implications for economic growth, human rights, public health and the environment. This is discussed further in Component 3.

Component 3: Revitalised agricultural production systems strengthening island food sources and livelihoods in the Pa Enua

Outcome: Increased island food security resilience and preparedness for disasters

Food security and economic resilience are inextricably linked in the Pa Enua as all natural resources including agricultural land is also the main source of economic well-being.

Although the Ministry of Agriculture (MoA) only provides policy oversight and technical guidance in the Pa Enua, this Component will align with and leverage the key deliverables of the Ministry of Agriculture Business Plan[25] to ensure that there will be improved sustainability of island food sources and improved island population nutrition as a result of revitalised agricultural production in the Pa Enua. Parliamentary debate on agriculture during the writing of this proposal suggested that due to the poor agriculture performance in the Pa Enua, it was proposed that agriculture development be re-centralised and the responsibility of agriculture development is returned to MoA.

An additional goal of this component is to unlock the potential of the agriculture sector in the Pa Enua thereby ensuring increased food security resilience and preparedness for disasters. For the northern group, this will require nurseries to support improved crops with social/cultural significance and improved trees for coastal protection, and garden system for low nutrient soils.

[25] Ministry of Agriculture (2017), Business plan 2017-18.

For the northern group, this will require significant reorientation towards production of fruit and horticultural products for domestic markets, including tourism in the southern group islands and to enable more inclusive and efficient food and agricultural systems. Critical to servicing this market, however, is the adoption of farming systems capable of producing a consistent, high quality supply. The high cost of finance in the Cook Islands, and the threat of uninsured losses due to natural disasters, is a major impediment to the level of investment required to effect this reorientation. Improved market information including market demand is also required to assist the agriculture sector to better co-ordinate production to meet domestic demand specifications. Tariff, tax and regulatory policies governing the importation and sale of agricultural products and inputs which promote the consumption of nutritious locally produced food throughout the year, as well as provide access to lower cost farm inputs, will offer additional security to agriculture sector investments.

Consistent with methodology on restricting the use of chemical fertilizer and pesticides from Climate Smart Agriculture, activities in Component 3 will use the current known Organic Approved products such as Neem Oil for insect pest management, Delfine (Bio-control Bacillus thuringiensis or Bt) and DC-Tron Oil for the control of scales, mealy-bugs, Organic Bulking as soil conditioning, use of beneficial Insects as bio-control.

Component 3 has five outputs with priority activities identified as follows:

Output 1: Island plant and seedling nurseries

The MoA provides fruit and vegetable nursery products to all growers on Rarotonga and the Pa Enua as part of an initiative to improve the supply of fruit and vegetable products by strengthening up-stream supply chains. It aims to support local production in competing with imported produce by providing propagation of seeds such as Capsicums, Tomatoes, Broccoli, etc., helping to create a comparative advantage for growers.

The United Nations (UN) Food and Agriculture Organization (FAO) continues to support MoA's nursery program, providing technical assistance and material in 2016, and a large supply of seeds and assorted vegetables in 2017. The supply is sufficient enough to supply the country with enough seedling and nursery products for the next two years. Varieties supplied include lettuce, Chinese cabbage, watermelon, cucumber, tomato, eggplants, and capsicums[26].

This output recognises the MoA key deliverable on conservation, exchange, and utilization of Crop Plant Genetic Resources for food security and nutrition. The construction of an island nursery will build on the FAO support as well as be the source of plant materials to upgrade/enhance farm productivity, craft making and biodiversity in the Pa Enua.

Crops vital for food security with social and cultural significance are Taro in the northern group and giant swamp taro in the southern group[27]. The other main crops include Cassava *Manihot esculenta*, sweet potatoes *Ipomoea batatas*, *Bananas*

[26] Cook Islands Government, Budget Estimates 2017/2018, Book 1
[27] Cook Islands country report (2008), State of plant genetic resources for food and agriculture in the Cook Islands.

Musa spp., coconut *Cocos nucifera*, and *Xanthosoma sagittifolium*. These lines of atoll resilient food crops will be protected and propagated for sustainability. This output will also look into strengthening capacity of the community to identify local varieties prone to genetic loss so that these can be conserved through other means such as MoA access to tissue culture. Well-known cultivars very adaptable to the mud-flaps arable depression areas where most of the food crops grows in the northern group will be propagated in the island nursery. With access to improved plant genetic materials (e.g. disease resistant variety), communities are assured of reduced disease problems and higher productivity and harvest.

Locally adapted varieties are often more tolerant of climatic variability and provide better nutrition. This output has a role in promoting local agrobiodiversity and healthier food varieties as shown in UNDP/GEF SGP project in FSM called Go Local!. For example, the Pukapuka and Nassau taro varieties (well adapted to their soil types and semi-brackish/fresh water mix) brings out the bright yellow colour Carotenoids (a class of phytonutrients) important for health.

There is interest in the development of local varieties and species (coconut, breadfruit, banana), through value adding, to cater for the local and visitor populations. Products such as: body and massage oils, dried fruits, juice, and confectioneries have high potential and support economic resilience. Island nurseries can play a role in restoring agricultural systems after a disaster. The nursery from the island or nearby unaffected island/s could supply planting materials to affected farmers in disaster situations (e.g. damaged Taro crop through seawater flooding from cyclone).

This output is also consistent with the Agriculture "long term Strategic Economic Development Program" which has identified five main potential Crops and one livestock. These are nono (which is abundant in the north and has economic potential if transport access improves) vanilla, coconuts for virgin oil, pawpaw, maire and goat (as livestock). These are supported by the short and medium term crops, such as taro, banana, vegetable, fruit trees, herbs and value adding products. This output also aligns with NSDP Goal 10.

The identified activities for this component takes into account the MoA role already in nursery programmes and to support this will include contracting an agricultural extension specialist. The agricultural specialist will have a major responsibility in each of Component 3 outputs. These will include:

Output 1:

- Convene a National Meeting for Pa Enua agricultural officers in Year 1 to confirm the 3-year work plan for this component.
- Designing the most suitable shade house/plant nursery for the island that takes into account population and suitability for plant material. The standard size propagation Nursery Shade House is (Standard size approximately 12 x 12 sometimes 12 x 14 depending on available land), Water Tanks 2 to 3 (2000L [FAO] others - up to 6,000), various agricultural tools and 1 Mulching Machine (Chinese).
- Review and identify in collaboration with Island Councils, MoA and the community the high value indigenous tree/plant species, improved coconut

varieties, improved fruit tree varieties, and medicinal tree species specific to each island including those plants used for crafts such as Rauara

- Combined with natural year-to-year changes, the sea level rise will intensify the impact of storm surges and coastal flooding therefore it will be essential to identify coastal areas that are at risk of erosion and propose plant material for coastal areas that will reduce coastal erosion.

Output 2:

- Use the FAO seedling programme to support the northern group school agricultural programme in collaboration with the Ministry of Education - The size of the Beds or the Vegetable Garden - depends really on size of suitable land for gardening and number of pupils in the school. Approximate size of the Shade House 12 x 14m top cover (2/3 of it will have 30 to 50% Shade while 1/3 cover with transparent roof (with sloping drop for rain water flow) except for 4 x 4m area with proper Iron roofing shelter for tools, materials and connection to the Water Tanks and linked to slopping roof. The sides will be fenced with chicken wire (1m height all round). The roof height is 2.9 to 3.4m from the ground level.
    - The non-raised or semi-raised Beds will be (from the 8m width = 0.5 walk way, 1.5 bed, .5 walkway, 1.5 bed, 0.5 walkway, 1.5 bed, 0.5 end walkway) = 8m at 12 m long (with 1 m walkway at each end making up 14m)
    - Suggested crops to grow Pak Choi, Cucumber, Spring Onions, Herbs, Pinapi, Tomato (Tropic Boy), etc.
        - Assess existing agricultural equipment already on the northern group Islands and recommend suitable mulching equipment that will be robust and able to provide sufficient mulch from green waste food scraps for the school gardens.
        - Mulching beds to be stationed next door to the raised beds
        - Assist northern group communities to develop home vegetable gardens for personal consumption
- Work with the communities to ensure sustainability of the nurseries and seedlings that are provided to the schools and farmers, a small fee will be collected to go into a revolving fund to maintain supply of seeds for the nurseries.

Output 3:

- Support the MoA, Planning Document “Agriculture Crop Scheduling Plan” to encourage southern group island farmers to improve propagation of vegetables.

Output 4:

- Support the collection of data in the Pa Enua

Output 5:

- Support the northern group proposals to the Economic Resilience Fund

Sustainability of the nurseries are key role for the Agriculture Specialist who will also be required to ensure that water demand for the agriculture sector is taken into account in the Water Security Plans developed under Component 2.

Some of the northern group Islands have hydroponic systems that were funded under SRIC, which has increased supply of salad products like lettuce and herbs in Manihiki and Penrhyn. It will be the role of the agricultural specialist to support the

installation of further hydroponic systems on the remainder of the northern group islands if required.

Output 2: School gardens for the northern group islands

The sandy soils of the mostly low lying atolls of the northern group are low in the nutrients required to grow many of the green leafy vegetables and other crops that are an important component of a healthy diet. Organically produced compost in small raised garden beds, sometimes referred to as keyhole gardens, are less vulnerable to seawater intrusion from rising sea levels (7–17 cm for all emissions scenarios).

Establishing school gardens also recognizes the high incidence of NCDs and diabetes in Cook Islands and their link to diet therefore the schools gardens will provide school children with a free daily vegetable plate in order to establish healthy consumption habits among the nation's youth, is one example of a practical and affordable program which should be the flagship policy of the MoH and MoA. Harvests from the vegetable garden can be a source of vegetables for the community and source of income for school to sustain the vegetable garden over the long term.

Teachers at the school will be trained by the Agricultural Specialist to maintain the raised vegetable beds, which cater to aspects and components in the Science, Social Science and the Health and Wellbeing Curriculums. The schools will also be trained in productivity and sustainability of the vegetable gardens as well as curriculum resourcing.

This output builds on the successful project of Te Ipukarea Society on waste management establishing worm farms and/or composters into schools in the Pa Enua. The compost and worm farm products are incorporated into small raised garden beds for producing crops. Worm farms produce worm castings and worm "tea" which are particularly high in nutrients. Originating in Africa, the raised garden has been recently successfully introduced to a low-lying Pacific Island country, Tokelau.

This output will be implemented in collaboration with the MOE, MoA and Te Ipukarea Society. Sustainability of this output will be essential and a small revolving fund will be established within the school. Excess produce will be sold to support the maintenance of the gardens. As well, the seedling plants will be provided by the island nursery.

Output 3: Tropical orchards technical support for southern group islands.

This output aligns with MoA key deliverable on provision of technical advice and information to farmers via extension services field visits, Field Day, Workshops and guiding pamphlets.

Increasing the consumption of fresh local fruits and vegetables among Cook Islanders, and reducing their consumption of imported processed foods high in salt, fat and sugar has been recognized by government as an important strategy in the prevention and control of Non-Communicable Diseases (NCDs). The Cook Islanders

has already shown its willingness to use price disincentives to deal with obesity and NCDs by implementing a tax on the sugar content of soft drinks; in addition to alcohol and tobacco.

Tropical fruits constitute a clear area where local production should be competitive to imported substitutes and a product range that is much in demand by the tourism sector. Local citrus fruits offer good opportunities for competitive import replacement as significant quantities of citrus (oranges, mandarins and lemons) are currently being imported.

Currently one local fruit orchard (Manea Nui Plantation) managed by an experienced fruit horticulturalist has, by using appropriate technology and selection of varieties, been able to provide a range of high quality tropical fruits throughout the year. This operation clearly demonstrates what can be achieved with a combination of knowledge and appropriate inputs. The MoA has already undertaken some work on extending floral induction technology for pineapples to farmers and this work should be expanded and also include other fruit varieties.

Increasing production, diversity and extending the season for fruit production also increases opportunities for processing into juice, nectar and pulp products. Fresh fruit juice production has already created opportunities for a small, but vibrant trade at the Punanga Nui Saturday market.

This output will enable more inclusive and efficient food and agricultural systems, builds a culture of enterprise and contributes to economic resilience in the Pa Enua. This output builds on the FAO-Chamber of Commerce project on establishing orchards on the southern group that commenced in 2014. This project has built shade house nurseries for the islands of Mangaia, Mauke and Aitutaki where root crops and seedlings are nurtured prior to planting in the orchards.

This output will support the incubation of orchards with technical support from a fruit horticulturalist responsible for planting and irrigation plans for each orchard and ensure sustainable irrigation systems are installed. The orchards are expected to be self-supporting after 12 months and the income generated will pay for the on-going work of the fruit horticulturalist.

Further activities in the southern group islands for the fruit horticulturalist will include:

- Assessing the state of the fruit trees on each of the southern group islands
- Discuss with the communities a plan of action to either cut, prune or manage the fruit trees
- Manage the fruit tree plan of action with the MoA staff on island ensuring appropriate equipment is available and suitable areas to compost the tree trimming waste
- This tree trimming exercise will involve a community effort but once completed within a two-year period there will be large quantities of fruit that will provide a number of economic opportunities for the community.

It will be essential for the horticulturalist to work closely with the Water Security Engineer and ensure that Water Security Plans include water for agriculture. The

agriculture sector is identified as the single largest consumer of water, with estimated daily use of 4,600 m^3 in the Cook Islands. Ensuring a regular supply of low cost water is essential to improving the reliability and quality of agricultural produce in the Pa Enua. The introduction of water efficient irrigation systems will be essential if the agriculture sector is to supply the domestic and tourist markets during the season of highest demand: the drier 'winter' months during the middle of the year. As a result it is critical that the plans develop a clear strategy for agriculture water use and supply, which would ensure that farmers continue to access water.

The fruit horticulturalist will work collaboratively with vegetable farmers and the Agricultural specialist to improve and enhance vegetable produce on island and delivery to Rarotonga.

Output 4: Pa Enua Agriculture Knowledge Sharing Platform

The MoA-established monitoring system to track market crop and vegetable supply and demand for production and price changes on Rarotonga has successfully been operating for the past three (3) years. Data information has been compiled and generated through the AgINTEL (**Ag**riculture **intel**ligence) database system and published through the Agriculture Market information bulletin for growers and the Pa Enua. There has been growing interest to extend the model to the Pa Enua to help the Pa Enua farmers to supply vegetable crops to Rarotonga, as they are considered more attractive in price and supply. The Pa Enua April agriculture food security forum meeting requested the MoA to establish the database survey system for the southern group islands to help the islands better understand their vegetable crop needs and resource gaps that benefits households retail shops, and markets and increase the opportunity for agricultural produce between the Pa Enua and Rarotonga.

Since establishing the database tool, regular reports have been generated to farmers on market opportunities. The purpose of the AgINTEL is to help the MoA better understand the current functioning and potential of the agriculture sector in the Cook Islands. This was to help them monitor the success of the programme and to also gain better intelligence on the sector for the design of future support. Areas of particular interest are supporting import substitution opportunities and building linkages between domestic producers and the tourism industry (restaurants and hotels).

Expanding the AgINTEL database to the Pa Enua

At the request of the Island Governments and their respective agriculture departments the programme will commence on the Islands of Mauke, Mitiaro, Mangaia, Atiu and Aitutaki in August. The programme has three activities that include the following data collection:

- Agriculture household holdings data capturing survey – to capture farmers' agricultural production for crops and livestock.
- An enterprise survey for (motels, restaurants, resource use for arts and craft and maire production) to capture their consumption and therefore demand of agriculture products and produce.
- Market survey to capture the quantity and value of agriculture produce sold at the island markets.

In combination with trade statistics, the Rarotonga market bulletin and other regular national censuses (population, household income and expenditure survey, tourist arrivals and others), the different surveys combine to provide a holistic and comprehensive understanding of the sector. The innovation of the AgINTEL was not only the establishment of the survey work for the Pa Enua data collection but to bring the data together within one database for easy comparison and analysis. It is also aimed that over time the Ministry could use the data to identify the production and consumption needs and gaps of agriculture produce and therefore facilitate fast and predictable facilitation of resources, funding or technical support to communities on the islands to improve production of crops and livestock needs. The AgINTEL database system is robust to a level that the result analysis generated by the Microsoft access software has been prepared by a qualified statistician to make sure the results are statistically true to the nature of the agriculture production supply and demand.

This output will provide the MoA with equipment to help better establish and enhance the data survey collection services on each of the Islands. This includes the training of agriculture and island administration officers on the proper process of conducting surveys, methodology and the process of conducting interviews and the handling of sensitive information. The process of carrying out data entry work will require ongoing training from MoA and shall include database system training on the transformation of data for analysis that will be centralized with the MoA for analysis processing and for publication purposes. While the information data remains the property of the Island government, the sharing of the information rights is one of the agreements that tentatively has been approved by the island Governments. The equipment that will used for this work includes software and hardware expansion more particular the central server for harvesting all data with the Ministry will be required to be expanded and upgraded from its current storage capacity. Digital survey tools to speed the data collection process while minimizing data entry error controlled by stringent database fields. The GPS system held with the MoA for land-use classification on current crops and tenure ownership aggregated from various land parcels belonging to farmer and household. The fruit tree forest inventory assessment on tree crops and its distribution over the island by native forest tree species and fruit tree type, (coconuts, mangoes, breadfruit, lychee) over (native and medicinal trees species) its uses, by variety, and its abundance to determine quantity and tree quality for on-going management needs. The results of the assessment allows the island community to rid poor performing fruit trees to be replaced by better producing tree varieties due to age, unsuitable variety, locality due to soil, and others as part of the strategy for increasing food security/source resilience. The outcome of the assessment allows the MoA and the Island community to plan a tree planting and management program to replace poor varieties. The Atiu island coconut oil program is already in the process of planting a total of 5,000 superior coconut seedlings for this program. Further information will be required in order to further develop a coconut tree planting and management program due to the impact of coconut stick insect after the eradication of myna birds. This equipment will also be used to demarcate property boundaries that are high risk to wild animals to help define areas that requires protection as well as areas affected by diseases and invasive species restricting access and transfer to unaffected areas.

This output will look into the supply chain pathway to the tourism sector including local retailers and mini-takeaways on the Pa Enua. But the priority and highlight for this output is food security and nutrition and healthy living. In the event of excess production, this will be shared or sold for revenue generation or processed / preserved / value added (e.g. Pa Enua women's groups and school students were trained in preserving fruit under the FAO current TCP Food Security project capacity building programme).

The ultimate goals for this output is to help unlock potential of the agriculture sector in the Pa Enua ensuring increased food security resilience and preparedness that will ensure long term sustainable production and livelihood opportunities. This data will also be captured in the Government central database ArcGIS (Figure 4) and filtered to the MoA and other users with permission.

Knowledge sharing of E-Agriculture information

The knowledge on Cook Islands agriculture (crop and livestock production, local knowledge and best practices towards climate change adaptation) is abundant and available but is found to be fragmented and can be easily structured into a knowledge sharing medium as a source of information accessible to various users, researchers, farmers including education institutions, that will support student research as well as extension services of MoA in the Pa Enua. This would include: past records on land tenure, soil information that was utilized for agriculture production, traditional knowledge in planting local crops which is becoming scarce because there no one is recording the information. The accessibility of information regarding traditional knowledge including the Arapo calendar and the linkages around seasonal planting of traditional crops as well as defining its relationship with the moon phases and the ocean tides is highly important to the future generations of our children in schools. The information source becomes so vital to generations and uses because it is specifically information that reflects Cook Islands agriculture.

The E-agriculture information source will be designed by a consultant who is familiar with Cook Islands agriculture and knowledgeable in adobe reader software and file hyperlink – expertise will be required to aggregate all Cook Islands information into an adobe portal. It is envisaged that the tool will be a shared online portal system and accessible to those in the Pa Enua. The timeframe required for the portal to be developed may cover 12 - 18 months. It requires working with farmers and growers on various islands, in order to interview senior citizens to help compile traditional practices so they can be shared.

Output 5: Allocation of Economic Resilience Fund.

The purpose of the Economic Resilience Fund (ERF) is to fund viable and innovative start-up businesses, that builds on a culture of enterprise in the agriculture sector. The Fund will build on the principles established by the FAO Grant Fund that will provide investments to ~~start ups~~ a maximum of $10,000. The ~~start-up~~proposed applications will ~~need to have~~require the support of the Horticultural Specialist or the Agricultural Specialist~~.~~ and all applications will meet the following criteria:

Eligibility

1. Projects related to agriculture production systems and value chain from production, processing and marketing
2. Project is located in the Pa Enua
3. Project proponents include private sector (farmers, business) with existing agriculture based businesses or new ventures.

Mandatory requirements (non-compliance in any one will disqualify the proponent ~~will provide a business plan establishing the objectives and activities~~

1. Alignment with national policy on agriculture
2. Compliance with island or national environmental policy
3. Compliance with AF ESMP and Gender Policy particularly cognizant of gender considerations
4. Business Plan that confirms sustainability of the project

Optional requirements (to be ~~carried out. The fund will support farm or orchard infrastructure such as fencing, irrigation, plant material as well as technical support as well as young farmers who are willing~~**used to** ~~be attached~~**rank/prioritise projects)**

1. Priority ranking in AgIntel platform
2. Track record and capacity of proponent to ~~farms on Rarotonga or Aitutaki.~~ execute the project
3. Acceptable level of risk
4. Sustainability of the economic, environmental and social benefits of the project
5. Overall value for money of the project based on the costs and the potential benefits that the project might deliver

There will also be a requirement to have a business mentor who will provide ongoing support to the start-up business.

The Economic Resilience Committee will be formed to oversee the economic resilience fund. This will include representatives from MoA, Business Trade and Investment Board (BTIB), Chamber of Commerce, Climate Change Cook Islands, OPM Pa Enua Division. The Committee will prioritise funding applications in accordance with fund criteria that will be approved during project inception. Inputs that will be prioritised during Inception and year 1 of the programme include:

- Fencing
- Irrigation
- Small equipment or tools
- Packaging
- Business Mentoring travel to the outer islands

A proposed budget allocation has been included in the final allocations will be the responsibility of the Economic Resilience Committee.

B. ~~B.~~ Programme Economic, Social and Environmental Benefits.

In order to describe the benefits, it is important to understand the Pa Enua communities who are the target beneficiaries of this programme. A summary profile of each of the inhabited islands of the Pa Enua are described in **Annex 1** and provides an overview of the population, land/lagoon area and use as well as distance from the main island of Rarotonga, which clearly demonstrates the challenges of these islands as a result of the physical remoteness of many communities from support services. It also summarises for each island the key sectors, issues and vulnerabilities, the most recent development interventions for each island to date and finally the focus of this programme for each island.

The benefits of this programme will be brought about from the positive impacts on local livelihoods and the capacity building and strengthening of island and sector plans that will be developed within each of the components. The programme has a strong focus on developing island awareness and capacities on preparedness and planning which will directly benefit local households by enabling them to understand and plan further their own and community driven adaptation actions. The programme

will pursue a gender-sensitive approach whereby women's participation in planning will be strongly promoted (through targeted training within each component, social mobilisation and other means) and thereby increasing the Pa Enua families and communities ability to adapt and support each other in the process. Monitoring of the this approach will be the responsibility of the Gender Specialist.

During the preparation of this proposal, an initial environmental screening process was carried out by the environmental specialist on the project team - the initial assessment of the programme has concluded that it has overwhelming potential to improve the current situation of the Pa Enua communities because of the integrated approach and the information flows that will ensure accessible statistical information for evidence based policy formulation.

Each component has identified economic, social and environmental benefits that are discussed in the following tables with a concluding summary.

Component 1: Strengthening disaster risk governance to manage disaster risk and enhancing disaster preparedness for effective response to "Build Back Better" in recovery, rehabilitation and reconstruction.		
Economic Benefits	Social Benefits	Environment Benefits
More robust data that will be made available through the Geo Portal will allow for improvements in reliable early warning systems for the population of the Pa Enua. This will allow for communities to secure their personal property reducing economic losses and damage. Understanding and managing the planning process will build the communities resilience to adapt and be more prepared thereby having economic benefits in itself. The GIS integrated Geo Portal will have national economic benefits because the filtered data will allow for early warning triggers at both island and national level as well as being able to conduct spatial analysis and create maps that will be included in periodic reports.	The population of the Pa Enua is 4,144 and each and everyone will benefit from knowing they will be safe. GIS surveyors will capture data on locations of vulnerable households and persons in order to provide support in times of hazards. The community will be more prepared and will benefit from sharing information with each other and formalizing planning systems on island that will enable the adoption and implementation of local disaster risk reduction strategies. Women will be encouraged to take up leadership DRM roles on island. Training components will allow men and women to use community knowledge and experience to build on skills that are within communities especially in the area of early warning systems. Community mobilisation mechanisms will support a more inclusive and active	There will be better planning with planting of fruits trees, e.g. mango which is traditionally planted for wind breakers and fruit in the southern groups, coconut trees will not be planted too close to buildings and dwarf varieties will be sought in both the north and southern group islands. With better information and awareness through visual applications, communities will enjoy the availability of information through government agencies or through developed apps. Through the awareness activities, people will take more thought in building their homes in accordance with the approved standards, and if not, they will be better prepared to take advantage of community cyclone shelters during times of cyclones and high winds. With this programme, also, and working with the Ministry of Agriculture, and utilizing local knowledge, growers will not only plan their farming around their subsistence needs, for the southern group, explore export

	community that is able to plan, design, construct and maintain disaster risk plans.	market to Rarotonga to sustain their incomes. With the information also, it will make it easier for DRMC to organize evacuation of vulnerable, especially the elderly during a cyclone.

In summary component 1 will have long-term benefits. While past initiatives are important building blocks, what is new with this programme is the development of integrated assessment, monitoring, preparedness and response system that connects the Pa Enua to the national system. Improved information sharing and closing knowledge gaps including support for the GIS Taskforce will have major long lasting benefits for the country and more importantly the remote islands of the Pa Enua where the collating of statistical information can be integrated, analysed and evidence based policy formulation and good decision making become a reality.

COMPONENT 2: Integrated water security management planning and implementation for Pa Enua communities		
Economic Benefits	Social Benefits	Environment Benefits
In order to meet the economic benefits expected by the Pa Enua communities, it will be essential that this component is coordinated and managed effectively by the contracted water security specialist/hydrologist. The Pa Enua Division of the OPM has limited expertise in this sector and changes proposed to the Water Division of Infrastructure Cook Islands funding that will allow for concentrated effort specifically on the Pa Enua is proposed. Water investments and water infrastructure assets are essential to the economic livelihoods especially in the northern group islands where there are no running streams. Training on how to maintain these key infrastructure assets will be provided for by this programme. There are approximately 2000 plus household tanks in use in the Pa Enua and 1,200 households will benefit from this training. Strengthening and building on the Island	Capacity building of Pa Enua communities over 4000 individuals, to implement Water Security plans that will support water testing and water quality programmes by the Ministry of Health and Red Cross. Safer drinking water for all communities will benefit everyone. Hygiene promotion and water conservation practices will benefit all schools in the Pa Enua. In the event that there is a major drought, desalination equipment will be stored safely on stand-by to supplement water requirements.	This component will improve the supply of water to the people of the outer islands, for firstly, potable water supply. For the northern group, where their water supply is dependent on rainfall, this is extremely useful for toilet, laundry and cleaning to keep the community healthy and able to cope with other demands of outer island living where there is a lack of sustainable supply water supply to the homes. The training programme will reduce water wastage, through poor plumbing and low quality materials. There will be training on best practice in how to conserve water and reuse water in small home gardens. For the southern group islands where there are other sources of water, the programme will assist the Pa Enua to collect rainwater and utilize ground water if it is proven to be sustainable. The integrated approach taken by the programme will enable the people of the outer island to utilize the information of component one to understand

level drought response plans that will be expanded to design management tools to assess and anticipate impacts of drought on drinking water supplies and early warning systems for the Pa Enua that can be received by mobile or digitized. The northern Island communities will benefit from installation of further tanks as well as repairs and maintenance of roofing over the tanks will have a social and economic benefit. The Water Security Fund will provide flexibility for further water investments after the Water Security specialist has identified water security gaps for less water resilient Pa Enua communities.		weather patterns and therefore clearly have a better idea when rainfall is expected and therefore prepare their tanks for the rain. For those islands with a reticulation system, the programme will assist them to understand both systems and how they can plan the use of their lands.

In summary, the improvements and integrated approach of island DRM, water, agriculture and health plans as well as the capacity building components of the programme will create an enabling environment that will secure the long-term sustainability of the adaptation measures. Management and maintenance training of water infrastructure assets will support the resilience of all the communities in the Pa Enua.

Component 3: Revitalised agricultural production systems strengthening island food sources and livelihoods in the Pa Enua		
Economic Benefits	Social Benefits	Environment Benefits
Improving economic livelihoods of the Pa Enua is the objective of this component. The northern group islands 8 schools and 350 students will benefit from the school gardens to be established. It will provide economic benefits by promoting healthy lifestyles of young students and thereby reducing incidents of NCD's, diabetes and improving health generally. The nurseries that will be established on each of the islands will have economic benefits for the entire population of the Pa	Healthy food especially in the northern group is important to ensure food security for atoll populations. Mulching equipment to create green waste in raised gardens and nurseries that ensure propagation of resilient coconut tree crops will also ensure coastal protection for the communities. Support for home garden will continue for all communities. Communities will be healthier, more willing to remain in the Pa Enua and have more economic	It is important when sites are cleared and new species are introduced that the laws pertaining to the environment is applied. AF Principles will help islands where the Environment Act 2003 don't apply. AF principles recognize best environment practice, these will be applied encouraged by the ESS Specialist where no environmental laws are present. The Biosecurity Act 2008 applies to all islands so introducing new exotic species to both groups will protect those islands from invasive species. Foreshore areas will be planted with salt resistant species, local

Enua. The crops, seedlings and specific local plants that will support local crafts and medicines will be promoted – all eventually having economic benefits for the communities. Southern group islands will benefit in being able to establish small craft businesses and those with entrepreneurial skills will be supported through the Economic Resilience Fund. Fruit tree pruning and propagation of orchards will provide fruit for the growing tourism market on Rarotonga. Import substitution and developing more agricultural farms in the Pa Enua makes economic sense. Revitalised agricultural systems will have national as well as island benefits.	opportunities to consider.	species will be planted to protect the foreshore and will also provide for medicine and timber. Trees like pukatea that are used for livestock feed and for food by people in the north will be raised in the nurseries and replanted. Pest resistant taro from Pukapuka and from the agriculture gene pool labs will be shared with growers on Nassau and Rakahanga. For the southern group, agriculture will be encouraged on the islands of Mangaia, Atiu and Mauke as a way to reduce lands taken over by the aggressive invasive tree species like acacia mangium. This will also help reduce lands that have become homes to wild pigs that spread invasive species and raid people's plantations. Proper roads will be built to plantations and this help people access their plantations during the wet season when it is usually very muddy. This is particularly important in site clearance for nurseries, gardens, orchards in the southern group, and other projects that is funded under the Economic Resilience Fund. With the engagement of an Environment Social Safeguard specialist, working in collaboration with the Specialists engaged, a greater awareness of the need to comply with best environmental practices when farming and using water conservation practices and supplying the community both the north and south with healthy foods.

In summary, the programme will ensure security of livelihoods in the Pa Enua that will be supported by reducing vulnerability of households and businesses to drought and cyclones, water scarcity, invasive species, coastal erosion that without this programme will continue to adversely affect the Pa Enua populations. Through improving food and water security, nutrition and related health conditions are expected to improve as well. Competing water users will be managed through improved planning to ensure all users have a sustainable supply of water resources.

Women in the Pa Enua

The Cook Islands National Policy on Gender Equality and Women's empowerment (GEWE) & Strategic Plan of Action, 2011-2016[28] outlines a set of agreed priorities for advancing gender equality and for ensuring the enabling environment for women to enjoy their human rights. In relation to this programme the Policy notes that information about the differential vulnerability of women and men to natural disasters and environmental and climate change is very limited. Very little is known in the Cook Islands about how people adapt to climate stresses as well. However, we know that climate change is greatly affecting natural resources upon which people's livelihood depends greatly and also impacts on household food security. Women and men play different roles in the livelihood strategy of their families and their use of natural resources and provisions of food for the family differs. Therefore it would be correct to suppose that climate change will affect women and men differently. Hence climate change strategies at the national and local levels need to be gender responsive, i.e., addressing differential needs women and men may have; build on their respective knowledge and skills to develop their capacity and reduce their vulnerability.

Communities, particularly in the Pa Enua, need to get support to develop their response to climate change impacts and natural disasters and women have to play a leadership role in developing and implementing their community's strategy.

The roles played by women in the home and in the community can be eased by mechanization and technology. An area of concern for women has been energy. Recent investments in renewal energy infrastructure in the northern islands and now in the southern islands of the Pa Enua provide energy security for these islands from renewable sources.

The gender mainstreaming approach for this programme focuses on maximizing women's active participation and engagement during consultations, trainings and awareness programs and as well as capacity building program to be delivered in the Pa Enua. A Gender Assessment Profile has been completed and provided as Annex 2 and a Gender Action Plan will be prepared during Inception by the Gender Specialist to outline proposed activities and targets in line with the gender mainstreaming approach to maximize benefits to both men and women during programme execution.

C. Analysis and cost-effectiveness of the programme

The level of investment by the Government in the Pa Enua is significant by any measure, representing the importance of the Pa Enua to the Cook Islands Government. This does not mean that economic development is impossible – it simply means that the Pa Enua face development challenges that need to be acknowledged, and are separate from those faced in Rarotonga. This requires novel solutions, substantial levels of subsidisation, or both. The alternative to leave the Pa

[28] GEWE currently under review

Enua populations to fend for themselves and do nothing is not an option for Government, where they would have to witness and be responsible, for the possible demise of some of the communities and immense hardship suffered by individual members of the population. It simply does not make economic sense and would have a major social and economic impact on Rarotonga the main island. The Cook Islands Government thus provides high levels of support to the outer islands to ensure that a reasonable standard of living is achieved for all residents. Despite this, inequality between Rarotonga the Pa Enua remains an issue. This programme complements the thrust of the Cook Islands Government strategy to address this imbalance.

The problems of the Pa Enua are not new. What is new with this programme is the development of an integrated assessment, monitoring, preparedness and response system that connects the Pa Enua to the national system. The paragraphs below describe each component and the alternatives considered followed by the cost-effectiveness rationale for each component with a summary table.

Component 1. Water and sanitation are pivotal to development of safe and healthy livelihoods and resilient communities as well as being the focus in disaster risk management and climate change adaptation, which requires strengthened national coordination frameworks. Substantial reduction of disaster risk in the Pa Enua requires perseverance and persistence with more explicit focus on people and their health and livelihoods – however lack of funding has been a major impediment. There continues to be limited coordination of information, information gaps and duplication of effort, which must be addressed. Early warning systems are limited and if available are managed remotely and manually. The upgrading and populating of the ARC GIS will allow the Geo Portal to effectively manage information flows through the centralised government portal which will be cost effective. The current systems includes, a number of separate databases within various agencies that are unable to communicate as one, duplication of effort and no coordination in the Pa Enua. Planning and implementation of DRM and island sector plans are disjointed and generally fail leaving communities confused and less able and prepared for hazards or extreme events. Early warning systems, that are electronic and include Apps for Pa Enua communities is a cost effective way of keeping communities resilient and safe. Developing the enabling environment of a national information hub is the key.

Component 1: Strengthening disaster risk governance to manage disaster risk and enhancing disaster preparedness for effective response to “Build Back Better” in recovery, rehabilitation and reconstruction	
Alternatives	Assessment
Do nothing	Sector databases relevant to disasters and climate resilience will exist in silos and not be accessible to EMCI for preparedness and response. These will also not be considered in disaster risk management plans.
Functioning Integrated GeoPortal without management response tools	Without management tools, the GeoPortal will most likely have limited use and provide minimal information for disaster events. In this scenario, islands would have not built the required resilience for disasters and would have higher levels of losses than would be the case when there is continual preparation and improvement of

	management response tools for all sectors

Component 2. The islands of the northern group have no running streams and therefore there is an urgent priority to climate proof critical water supplies by ensuring rainfall collection roofs are maintained and further water infrastructure is in place – leaving this infrastructure in a degraded and substandard condition and do nothing will mean that the seven schools of the northern Pa Enua will be at risk. The southern group has also experienced droughts in recent years, which have tested the small communities innate resilience escalating demand for water therefore capacity building and training in the communities on water quality and health are important components that will improve resilience of these communities against disasters and likelihood of droughts.

Component 2: Integrated water security management planning and implementation for Pa Enua communities	
Alternatives	Assessment
Do nothing	Islands have limited ability to assess preparedness and resilience to droughts and events of water shortages have higher probability
Manual system of water security monitoring	Manual system is prone to human error. Without a water model, the results will most likely be misleading requiring higher levels of water supply.
Water security plans without implementation capacity building	Developing island water security plans without implementation capacity building will most likely lead to inaction. Island administrations require training and capacity building to effectively implement the plans.
Focus on water quantity only and not consider quality	Not considering water quality will most likely lead to poor hygiene outcomes and inefficient use of water.
No water modelling tool developed	Water investments are not justified or considered using an appropriate tool that would determine the level of resilience required and therefore whether the investment is cost effective and necessary.

Component 3. Unlocking the potential of agriculture will transform the small Pa Enua communities ensuring increased food security for those in the northern islands and providing economic opportunities for communities of the southern islands. The Ministry of Agriculture will lead and engage fully with the Pa Enua communities to ensure that there will be sustained island food sources and improved nutrition as a result of revitalised agricultural production. There are growing problems facing Cook Islands population with regards to NCDs such as diabetes, cardiovascular diseases, hypertension, obesity and poor diet. NCDs are the main cause of mortality therefore AF interventions in the northern group with the schools garden programme and mulching of green waste on the sandy soils to produce healthy soil will be key investments to support increased nutrition and food security for the young people and communities in the north. Changing young minds towards choosing more nutritious food options need to be made available in the north - transport issues to bring these items to the islands is a major challenge therefore the only approach is to

ensure that these investments are provided – Young people become young leaders and changing attitudes at a young age will change and impact the way future decisions and budgets are spent by the island councils.

Food security and economic resilience are inextricably linked and the nurseries that will be installed on all islands or upgrading of existing nurseries will provide major opportunities for Pa Enua communities. These will be used to grow vegetable seedlings for distribution to schools and communities, improved crops and trees with social/cultural significance for local crafts will be propagated.

For the southern group, agriculture inputs will require significant reorientation towards production of vegetables, fruit and horticultural products for the domestic market. Critical to servicing this market however is the adoption of farming systems capable of producing a consistent, high quality supply. The high cost of finance in the Cook Islands and the threat of uninsured losses due to natural disasters is a major impediment to the level of investment required to effect this reorientation. Improved market information including market demand is also required to assist the agriculture sector to better coordinate production to meet domestic demand specifications. Tourism could potentially be the transformative industry that will change and build the Pa Enua agriculture industry and return it back to the days of the 50's and early 80's when agriculture contributed the most to GDP. Provision of an economic resilience fund will support small infrastructure inputs for farmers in the southern group – other approaches to support farmers has not been successful and this has proven to be very successful on Rarotonga and Aitutaki where farmers received a $10,000 grant to support infrastructure requirements. This has proven in the past to be cost effective way of supporting farmers.

Component 3: Revitalised agricultural production systems strengthening island food sources and livelihoods in the Pa Enua	
Alternatives	Assessment
Do nothing	There will be no Agriculture Intelligence systems established in the Pa Enua provide market intelligence to Pa Enua farmers. Traditional Knowledge will be lost and Agriculture information not available for other farmers to learn.
Do nothing	The Pa Enua will rely on Rarotonga on seedling supply with high transport costs and putting pressure on Rarotonga. Important Pa Enua plant varieties will most likely become extinct over time. Agriculture productivity in the Pa Enua will deteriorate.
Develop health & wellbeing curriculum without school gardens	While lessons in health and nutrition can be taught without a school garden, there will be poor adoption as vegetables are inaccessible. The school garden will deliver new food choices for young students – changing diets, improving food security.
Provision of farming/horticultural technical advice without Economic Resilience Fund (ERF)	Farmers will have limited ability to adopt technical advice as access to finance is challenging. With technical support from specialist, the ERF will enable co-financing from a bank and leverages the financing breadth of the ERF to a greater number of farmers. This will improve productivity and food security for more farmers.

The Cook Islands like many other Pacific nations suffer from persistent organisation weaknesses and limited national level capacity to implement and enforce adaptation interventions. Therefore the proposal has included specialists (in some cases Cook Islands experts) who will support the activities within each component. Their role will be to drive the activities with the communities, farmers and schools and the contracts will be performance and results-based. Alternative approaches by using Government personnel already with employment contracts have been considered but have proven to be less effective and therefore not cost effective. An issue for consideration by each Island government is the limited labour force in the country and even less in the Pa Enua. This will need to be addressed during project Inception.

At the operational level, cost effectiveness of the programme concept is reflected through the following considerations:

- Throughout the programme, resources will be aligned with the financing and delivery of programme Outputs that have competitive procurement components to ensure best value for money. In this regard, the programme will apply best practices identified by other, ongoing climate change and development adaptation programmes in the country (e.g. SRIC)
- This programme will utilize existing government structures and processes for implementation of village-level actions. By building on existing government and institutional structures, the programme will also harnessing in-kind support and contributions from offices at the national and island levels (office space, staff time, communications, etc.)
- The programme will be closely built on existing baseline programmes of line agencies, and will be fully aligned with the institutional arrangements for other and similar implementation projects.
- The bulk of programme financing will be directed to community-level activities and connect directly to local opportunities for the procurement of goods and services.
- The integrated approach of the programme is designed in a way to attend a broad set of adaptation needs of coastal communities, cross a variety of interrelated sectors in coastal areas, this way resources will be used in more efficient way to cover operational costs in a coordinated fashion.
- Operational costs will be shared also as much as possible through coordinating with other programmes on-going in the Pa Enua by each agency or Ministry.
- Travel is a very large operational cost for this programme reflecting the distance of the Pa Enua islands. Cost sharing and investing in charter flights with other programmes or Ministry will be pursued to ensure there are savings that may result in further visits by the respective specialists. National meetings that will be held for each component at the start Year 1 will be the most cost effective means to ensure that all stakeholders on each island understand what the programme is likely to achieve for the duration of the programme.

D. Consistency with National Sustainable Development Plans, National Communications and other Relevant Instruments.

This section describes how the programme is consistent with all national and sub-national sustainable development strategies, sector policies, national communications, joint national action plan on climate change and disaster risk management and other relevant instruments.

The latest official communication by Cook Islands in relation to climate change is the INDC where the Cook Islands reaffirmed:

- Its existing frameworks and robust systems guiding ongoing climate change mitigation and adaptation measures are considerable
- Loss and damage nor the full costs associated with building resilience to climate change are not factored into frameworks and systems which the Cook Islands expects to be covered by the international community over time
- It can deliver 100 per cent of its adaptation measures provided tools and technologies and strengthen capacities in all its inhabited islands, conditional on external support

National Sustainable Development Plan 2016 – 2020

The NSDP is a five-year plan which captures the aspirations and ambitions of our entire country. The plan articulates key performance indicators from our broader national policy suite to represent national development. These indicators underpin the sixteen development goals which are aligned to commonly identifiable sectors. It is third iteration and builds upon the successes of the previous plans as we strive towards our 2020 national vision. The Cook Islands national vision is:
'TO ENJOY THE HIGHEST QUALITY OF LIFE CONSISTENT WITH THE ASPIRATIONS OF OUR PEOPLE'.

The NSDP looks to encapsulate the aspirations and ambitions of our entire country over a 5 year period into a single document. The document builds upon the successes of the previous plans and represents an evolution in how we plan for our future. The development goals and the indicators that underpin them are triggers for action and change. This rationale is based on the understanding that "what can be measured can be changed". The specific actions to positively influence these national outcomes will be derived from sector based policies and strategies.

1. Improve welfare, reduce inequity and economic hardship
2. Expand economic opportunities, improve economic resilience and productive employment to ensure decent work for all
3. Achieve food security and improved nutrition, and increase sustainable agriculture.
4. Promote sustainable practices and effectively manage solid and hazardous waste Sustainable management of water and sanitation
5. Build resilient infrastructure and Information Communication Technologies to improve our standard of living
6. Improve access to affordable, reliable, sustainable, modern energy and transport
7. Improve health and promote healthy lifestyles

8. Ensure inclusive and equitable quality education and promote life-long learning opportunities
9. Accelerate gender equality, empower all women and girls, and advance the rights of youth, the elderly and disabled
10. Achieve food security and improved nutrition, and increase sustainable agriculture
11. Promote sustainable land use, management of terrestrial ecosystems, and protect biodiversity
12. Sustainable management of oceans, lagoons and marine resources
13. Strengthen resilience to combat the impacts of climate change and natural disasters
14. Preserve our heritage and history, protect our traditional knowledge, and develop our language, creative and cultural endeavours
15. Ensure a sustainable population engaged in development by Cook Islanders for Cook Islanders
16. Promote a peaceful and just society and practice good governance with transparency and accountability

Cook Islands Second Joint National Action Plan (JNAP II)

The JNAP II records all current and planned Climate Change (CC) and Disaster Risk Management (DRM) related activities in the Cook Islands and is designed to strengthen our resilience and therefore describes the 5 year plan of action to implement Goal 13 of the National Sustainable Development Plan 2016-2020 (NSDP) “Strengthen resilience to combat the impacts of climate change and natural disasters”.

The JNAP II poses the following question, ‘Are we resilient?’ “In the event of an unforeseen disaster, are we, the people of the Cook Islands, prepared to respond in an effective and efficient manner to ensure our safety and security?”

The vision of the JNAP II 2016-2020 is: “A Safe, Resilient and Sustainable Cook Islands”. The goal of the JNAP II 2016-2020 is: “Strengthen climate and disaster resilience to protect lives, livelihoods, economic, infrastructural, cultural and environmental assets in the Cook Islands in a collaborative, sectoral approach”.

The ‘Climate and Disaster Compatible Development Policy 2013-2016’ is the leading Cook Islands policy document for CC and DRM. The goal of this policy is to provide an integrated and coherent policy and planning framework which directs country-led and co-ordinated adaptation and mitigation actions and resources towards climate and disaster compatible development outcomes. In line with this policy, JNAP II proposes actions for climate change adaptation, mitigation and disaster management. JNAP II promotes a sectoral approach to our CC and DRM response due to the cross-cutting nature of climate change and disaster risk activity. Collaborative implementation will assist to make the best use of resources. The JNAP II is presented containing nine strategies with specific outcomes that identifies potential development partners and Council of Regional Organisations in the Pacific (CROP) agencies to provide technical and financial assistance. The nine strategies are:

1. **Good governance**
   Strengthen governance, policy, strategy and legislation.

2. **Water and food security**
   Improve water quality, efficiency and conservation. Strengthen livelihoods and capacity for climate adaptation in agriculture and fisheries.
3. **Environmental sustainability**
   Promote sustainable practices and protect and conserve our environment and the efficient management of waste.
4. **Research monitoring and information management**
   Improve research monitoring information generation management and sharing
5. **Cook islands culture and identity**
   Protect sovereignty, our unique identity and build a resilient population.
6. **Energy and transport**
   Promote the use of sustainable renewable energy and energy efficient reliable transport.
7. **Land and infrastructure**
   Strengthen land management and promote reliable infrastructure development.
8. **Climate and disaster risk resilience**
   Strengthen climate and disaster risk management and improve early warning systems
9. **Health and welfare**
   Strengthen the health and welfare service delivery to improve response and recovery of climate and disaster

The JNAP II aligns itself closely to the National Sustainable Development Plan 2016-2020 (NSDP), the Medium Term Budgeting Framework (MTBF), the National Disaster Risk Management Plan, the Cyclone Recovery Reconstruction Plan, the National Environment Strategic Action Framework, the National Biodiversity Strategy and Action Plan, the Preventative Infrastructure Master Plan, the National Infrastructure Investment Plan and the Pa Enua Community Sustainable Developments Plans.

With respect to the planning hierarchy in the Cook Islands Government, the JNAP II constitutes a ‘Sector Plan’ for a unified disaster risk management and climate change adaptation sector. The JNAP II is cross-cutting in nature in that it strives to encourage a whole-of-government, all-hazards approach. This means that many of the strategic actions identified in the plan relate to the activities of line ministries and as such it is the intention that they be included in the respective planning frameworks of these line ministries. This is critical to ensure that the linkages are made and that implementation across all relevant government ministries and agencies occurs.

JNAP I was comprehensive however despite extensive consultation, experienced low impetus. JNAP II will seek to address this issue by:

- Establishing and resourcing a JNAP secretariat and steering committee. A review of the JNAP reveals almost 80% of actions have at least started or are in progress, there is no central monitoring and evaluation structure. To improve impetus, it is recommended to establish and resource a JNAP secretariat and steering committee to monitor the progress of the plan.
- Mainstreaming JNAP II with national policy and planning. The JNAP II strategic matrix contains actions taken directly from national policy and planning

documents. The actions are therefore considered national priorities and are more likely to be accepted and implemented by stakeholders.

- Adopting a holistic approach to include climate change mitigation activities. To facilitate this 'merger' a number of changes to the institutional arrangements occurred, such as the establishment of a climate change office – referred to as Climate Change Cook Islands (CCCI) and a renewable energy unit – referred to as the Renewable Energy Development Division (REDD) both in the Office of the Prime Minister (OPM). The Cook Islands Government has made a bold commitment towards transforming the energy sector 100% reliant on renewable energy by 2020 with specific details set out in the updated Cook Islands Renewable Energy Chart 2016.

National Environmental Strategic Action Framework

With respect to climate change, the National Environmental Strategic Action Framework (NESAF), the National Biodiversity Strategy and Action Plan and Third National Communication to the UNFCCC (all of which are currently under review/development) are guiding documents for the JNAP II. The NESAF is mandated by the Environment Act 2003 and is a key document for the environmental sector including climate change. The Programme Objective stresses the importance of mainstreaming 'climate change adaptation and mitigation considerations' and to 'address unacceptable risks to the natural environment and economy, including those arising from natural hazards such as extreme weather events, climate variability, climate change and sea level rise'.

Cook Islands Third National Communication

The Cook Islands Third National Communication to the United Nations Framework Convention on Climate Change is planned to be submitted in 2018. It will provide the most recent update of the status of climate change in the Cook Islands. A variety of adaptation measures are presented for relevant sectors. Many of these proposed projects are addressed in the JNAP II either directly, or by way of having influenced the development of related Strategic Actions. The report is based on national and community level consultations.

International Policy Context for DRM and CC

The policy context for DRM and CC at this level is shaped by a number of inter-related international conventions and framework documents relating to sustainable development, environment, climate change, the millennium development goals and disaster risk management. This programme is also consistent with these international conventions and framework documents namely the Sendai Framework for Action 2015 – 2030 and the United Nations Framework Convention on Climate Change (UNFCCC), Paris Climate Change Agreement under the United Nations Framework Convention on Climate Change and the Kyoto Protocol, which sets out the details of how and when countries should meet their national emissions reductions targets.

Cook Islands Gender National Policy

Progress by the Cook Islands in meeting gender equality has been addressed in the Report "Cook Islands Gender Equality Policy Analysis Implementing the National Gender Equality Policy in the Cook Islands 2015" by Lynsay Francis Rongkea. The Report assesses the gender mainstreaming capacity of the Cook Islands

Government recognising that effective mainstreaming of gender and women's human rights requires a strong legal and policy framework, political commitment, a supportive organisational culture, accountability and responsibility, technical capacity and adequate resources across the whole of government. There is a critical lack of knowledge and understanding of gender issues, gender mainstreaming, the legal and policy frameworks, information and political commitments to human rights, gender equality and women's empowerment.

This review highlights commitments to CEDAW, the Beijing Declaration and Platform for Action, the Pacific Platform for Action, the Millennium Declaration and Millennium Development Goals, The Aid Effectiveness Agenda, the Pacific Plan, The Samoa Pathways, the National Sustainable Development Plan (NSDP) and the National Gender Equality and Women's Empowerment Policy and Five Year Strategic Plan of Action (2011-2016).

Legal frameworks are in place by existence of constitutional and legislative provisions, the existence of government policy mandates and by virtue of ratification or accession of relevant international human rights treaties to strengthen capacity for gender responsive development towards an enabling environment to empower women's full participation in economic development. An important pre-requisite is a strong political will to promote human rights, gender equality, non-discrimination, social and economic equality to ensure that gender equality and women's rights are explicit in every sector.

The Cook Islands has made significant commitments to gender equality, non-discrimination and women's empowerment under the Convention on the Elimination of all Forms of Discrimination against Women (CEDAW) and other United Nations treaties and instruments and other international and regional policy frameworks. The Cook Islands government reaffirmed its commitment to Gender Equality and non-discrimination when it acceded to CEDAW in its own right in 2006.

The national women's machinery is the Gender and Development Division (GADD) of the Ministry of Internal Affairs and the national women's policy are actions from the Beijing Platform. The GADD has been entrusted with the responsibility of coordinating the implementation of mainstreaming policies. On 21 June 2011 Cabinet approved the National Policy on Gender Equality and Women's Empowerment (GEWE), together with the 5 year Strategic Plan of Action 2011-2016. The implementation of the GEWE, gender equality policies and gender mainstreaming should be the responsibility of every Ministry and government agency, and not solely the responsibility of the national machinery (GADD).

The Cook Islands Government has made progress in achieving the MDGs, Education and Health goals as identified in the Gender Assessment Profile Annex 2. However progress on MDG 3 gender equality and empowering women, has been slow and some indicators such as the proportion of seats held by women in parliament, was not met in 2015. Despite the high level of education, women are still underrepresented in public office and all levels of decision making.

The NSDP 2016-2020, anchors the Gender Equality and Women's Empowerment (GEWE) Policy in the implementation of Goal 9 mainstream gender into the National

Sustainable Development Plan (NSDP). It also complies with international obligations for gender mainstreaming and therefore there is a need for timely quality statistics and indicators. This information is required for evidence-based policy-making, the setting of development priorities, and regular monitoring of and reporting on policy performance and development progress, national, regional and international.

The Report also noted that availability of and access to information is an important pre-requisite in order for people to be more effective in participating in the development and administration of laws and policies. Access to and the dissemination of information, reports and accurate data in relation to the effective implementation of the GEWE, the CEDAW, Beijing Platform and other human rights obligations, should be made available from the GADD Division, to support on-going research, identifying current issues and constraints in different spheres, such as that of women indecision-making, women's economic rights and violence against women, and on the current status of men and women. Lack of access to information can impede efforts in the implementation of CEDAW, the GEWE and at gender mainstreaming. Without access to information, individuals are disempowered – rendered incapable of influencing decisions that affect them.

When the Cook Islands reported to the CEDAW Committee, the Committee raised its concern at the lack or limited availability of data disaggregated by sex in a number of areas of the Convention, which are necessary for an accurate assessment of the situation of women and for informed, targeted policymaking and the systematic monitoring and evaluation of progress achieved, and trends over time, towards the realization of women's de facto equality in regard to all areas covered by the Convention. The Committee "calls upon the Cook Islands to enhance the collection of comprehensive data disaggregated by sex and of measurable indicators to assess trends in the situation of women and of progress towards the realization of women's de facto equality, and calls its attention to general recommendation in this regard".

Statistics and comprehensive data has been identified across all sectors as evidenced in this programme and the need for continued support for capacity building and strengthening in data collection (disaggregated by sex and age), gender analysis and utilisation of census and other survey data regarding specific issues, including monitoring and evaluation. Incorporating gender indicators will provide a measure of social change and assess the performance and effectiveness of government policy, by measuring the changes in the status of women and men over a period of time. The Roadmap for Cook Islands National Strategy for the Development of Statistics (CSDS has been highlighted as a necessary strategy that underpins the development of a central database in order for the major outputs of this programme are to be achieved. An extract from the CSDS Roadmap in provided in the box.

An extract from the CSDS Roadmap

The preparation of a national strategic plan to (i) produce such statistics on an ongoing, sustainable manner and (ii) develop information management systems facilitating should be undertaken in recognition of the cross-cutting nature of official statistics and their relevance across government in: providing a quantitative basis for informed decision-making in socio-economic development planning and for monitoring development programmes and projects; and sufficiently evaluating the outcomes of development programmes and projects.

This AF proposal has identified gender as a key element in the implementation of the Programme and has included the contracting of a Gender specialist who is familiar with the Cook Islands context and will provide the gender balance required for this programme.

Cook Islands Strategy for the Development of Statistics 2015 - 2025

The Cook Islands Strategy for the Development of Statistics (CSDS) was created out of the ever growing demand for high quality, timely, accessible statistical information needed for evidence-based policy formation and of monitoring development progress in the Cook Islands. The development of this strategy was officially endorsed by Government in 2013 giving recognition to the importance of having a sound and modern statistical system in place to cater to these needs.

The CSDS presents the vision, mission, core values and objectives that are going to guide the National Statistical System (NSS) for the next ten years, from 2015-2025.

Statistical data and information on the economic, social and demographic status of the Cook Islands guides government in developing national policies strategies and interventions designed to further socio-economic development with sustainable environmental management. Statistical data:

- provides the necessary benchmarks for policy and planning;
- provides unambiguous evidence for priority setting, as well as monitoring and evaluating progress – across sectors, across different geographic areas, targeting specific population groups such as youth, the unemployed, the elderly, and the poor;
- alerts policy makers where progress is off track and prompts investigation to re-align policy for better results; and
- ensures that limited resources are used in an effective and efficient manner, and highlight where additional resources are needed.

The need for more and better coordination is highlighted together with the need for a central access point to statistical information and analysis in light of scarce resources for data collection and limited capacity in data analysis. More dialogue and understanding is needed between users and producers of statistical information. An issue related to this is the need for harmonising standards and definitions across surveys conducted by different organisations to make the results comparable and increase the usefulness of the information.

The strategy for implementation of the Programme Logic Framework Is described in the introduction to Part II and highlights the need to adopt the CSDS framework which will be the foundation for the collection and collation of data and who has access to the data. For each of the agencies there is a need to produce and use statistical data and its implementation will result in the timely and regular supply of important information to facilitate evidence-based policy development to help improve people's lives. The CSDS will underpin and guide the work of the National GIS Taskforce.

Cook Islands National Disaster Risk Management Plan 2017

The Cook Islands National Disaster Risk Management (NDRM) Policy is a plan that describes the structure and processes for disaster risk reduction and disaster management decision-making for the Cook Islands. These, in turn, guide the agencies who must prepare the plans, procedures and programmes that are necessary to strengthen the resilience of the nation and its communities.

The DRM Council is responsible to report on the implementation of the NDRM Plan to Cabinet and to Parliament and must do so every year. It has the power to review and to amend any part of this Plan during its life. Any amendments recommended by the DRM Council must be approved by Cabinet. A mid-term review must be carried out, by the DRM Council, on the third anniversary of the Plan.

This plan replaces the Cook Islands National Disaster Risk Management Arrangements 2009. Those Arrangements have been useful, but agencies particularly in the Outer Islands and at Vaka (Puna) level (in Rarotonga) are still struggling to come to grips with DRM. Those Arrangements had a strong focus on cyclone-related disaster – the current Plan is designed to help all agencies understand their role as measured across the full range of hazards and risks.

Disaster Risk Management and Climate Change Adaptation are interrelated. Both concepts have a risk reduction focus. For now, DRM has strong legal arrangements as outlined in the DRM Act while Climate Change Adaptation is simply a policy and has very little domestic legal underpinning. For this reason, where risk reduction efforts overlap with climate change adaptation policy initiatives, this Plan (and its associated sub-plans) must take precedence.

For future reference, it is important to note that at the national policy level (and at regional level), the two concepts of DRM and CCA are integrated. It is likely that during the life of this Plan that commitment to integration (currently found only in the National Climate and Disaster Compatible Development Policy and the National Joint Action Plan for DRM and CCA) will take full legal effect. This plan and all sub-plans will need to be modified at that time.

Public officials who use the Plan will find that it helps them prepare for and manage hazards and risks associated with Climate Change. The Plan is also an important tool to help public officials comply with their obligations under section 23 of the MFEM Act 1995. Every public official is bound by the principles of fiscal prudence to "prudently manage the fiscal risks facing the Crown. Disasters pose huge fiscal risk so the Plan is an important part of that "prudent management" and all relevant stakeholders in DRM are bound to take this policy into account in their decision making and planning.

Each of the islands of the Pa Enua have developed Island Disaster Risk Management Plans but are not consistent with the 2017 National Climate and Disaster Risk Management Plan. It will be important that this Programme updates all these plans in order that they comply with the national plan.

Cook Islands National Water Policy

The purpose of the Cook Islands National Water Policy is to ensure all national water resources are protected from contamination sources and are managed in an integrated, equitable and sustainable way; and all the population has access to safe drinking water, all public health risks associated with unsafe drinking water are identified and managed commensurate with local circumstances and in a timely manner

The overarching vision for the Policy is “To protect, enhance and improve the resilience, quality and sustainability of the Cook Islands water resources to ensure the health of the people and the environment”.

To fulfil this overall vision the policy will pursue the following objectives:

Objective 1: Ensure Safe and sustainable management of water supply.
Objective 2: Ensure water systems are resilient and mitigate the impacts of Climate Change and disasters.
Objective 3: Ensure access to reliable, safe drinking water for all who reside in the Cook Islands
Objective 4: Establish equitable and economically-sustainable systems for managing demand, appropriate usage of water, conserving water and minimizing waste and leakages.
Objective 5: Ensure sustainable management of both inland and coastal water resources.
Objective 6: Actively engage communities in the sustainable management of water
Objective 7: Ensure catchment and water sources are protected
Objective 8: Optimize and standardize the regular testing of water quality.
Objective 9: Consistently and transparently apply water policy, plans and laws.
Objective 10: Ensure appropriate resources, capacity, skills training, and information is available for managing water resources and infrastructure.

Although there is no central body responsible for water resources on the Pa Enua the Water Committee that will oversee Component 2 of this Programme will be guided by this National Water Policy document. Implementation of the activities will include agencies such as Ministry of Health and Cook Islands Red Cross who take into account the objectives that have been outlined in the National Water Policy.

Cook Islands Sanitation (Wastewater Management) Policy

The purpose of this policy is to provide a high-level framework for wastewater management in the Cook Islands. The scope of this policy is primarily related to:

- Safe collection, treatment and disposal of wastewater to an approved standard for:
    - Domestic residential homes
    - Commercial facilities including tourist accommodation
    - Community and public buildings
- The promotion of appropriate practices for wastewater management.

The term ‘sanitation’ can extend to cover cleanliness, hygiene, and the environmentally sound collection and disposal of liquid and solid wastes. However this policy focuses on wastewater management.

This policy does not address surface water runoff or animal waste from domestic or commercial farming. However it is recognised that there is a need to develop a policy framework to address these issues. Surface water runoff in particular can affect the operation of wastewater treatment systems.

The policy applies across the whole of the Cook Islands. However some of the more specific aspects of the policy, i.e. the references to compliance with the Public Health (Sewage and Wastewater Treatment and Disposal) Regulations 2014, do not apply beyond Rarotonga and Aitutaki, until such time as the regulations are extended to apply to other islands[29]. Therefore in the implementation of Component 2 the Water Committee will be guided by the National Sanitation Policy.

National Agriculture Policy 2017-2021

The agriculture sector has a major role to play in sustaining the development of the tourism sector and the social, economic and environmental well-being of the Cook Islands. The policy focuses both on sustainable opportunities and minimisation of threats. Among the seven policy objectives (Food Security & Nutrition; Enabling Environment; Market Efficiency and Trade access; Science, Research & Technology; Human Resource Development; Biosecurity; and Climate Change and Disaster Risk Resilience), the proposed programme is consistent with the following:

- Promote climate change and disaster risk resilience
- Strengthen household and national food security and nutrition
- Improve food production and products through science, research, technology and the sustainable practices.

Cook Islands National Strategy and Action Plan for Non-Communicable Diseases 2015 - 2019

Te Marae Ora Cook Islands Ministry of Health is the main provider of health care in the Cook Islands with health services ranging from public health (inclusive of primary care) to secondary and minimum tertiary care and with coverage extending to all of Pa Enua (outer islands). Despite having a reasonable standard of health, the Cook Islands continue to struggle with the increasing burden of non-communicable diseases (NCD) which includes cardiovascular diseases, cancers, chronic respiratory diseases and diabetes. This is further amplified with the rising in the population of their common risk factors of smoking, poor diet, harmful use of alcohol and physical inactivity. Unless this trend is reversed, NCDs will continue to be a major public health challenge, which will undermine the social and economic development of the Cook Islands.

[29] The regulations took effect for Rarotonga and Aitutaki from the date of commencement. However the regulations state that no permit or certificate is required to be issued under these regulations for a sewage system on any other island, until approved standards are applied to the specific island to regulate any matter provided for in these regulations.

Component 3 builds on the need for the Cook Islands to become a healthy society and to support this effort, activities under this component are consistent with the Cook Islands National Strategy and Action Plan for NCDs.

Sub-national polices

Pa Enua Island Development Plans

All Pa Enua islands have medium-term development plans known as community sustainable development plan (CSDP), island strategic plan or island and puna plan. Most of these island development plans have been updated to align with NSDP 2016-2020. The priorities in these plans have been tabulated and verified with island government mayors and/or executive officers via telephone consultations. The results have been documented in the island profiles in Annex 1 and used to inform the design and scope of the proposed programme.

E. Programme Compliance with Relevant National Technical Standards and Environmental and Social Policy of the Adaptation Fund

The programme will ensure potential adverse environmental impacts are identified and avoided, and where impacts cannot be avoided, a suitable plan is prepared for those impacts to be mitigated and managed. Applicable and relevant national technical standards including best environmental practice will be used to deliver the planned activities. The Environment and Social Safeguards (ESS) Specialist engaged under the programme will ensure compliance to the environmental and social policy of the Adaptation Fund as well as meet the requirement of the Cook Islands Government (CIG) Te Tarai Vaka Activities Management System (TTV) which includes the principal environmental law of the Cook Islands, the Environment Act 2003. Work on ensuring compliance to the AF policy and the requirement of the Environment Act will commence at the inception phase where planning for the activities of the programme will commence. The process will identify, prevent and minimise any damage that the proposed activities could cause to people and the environment.

A preliminary environmental and social assessment was performed as part of the programme design to ensure existing environment and social standards applicable to the Pa Enua communities are taken into account.

These are described below in the context of the AF Principles:

- *Compliance with the law* – It is important that the activities for each component of the programme do not breach existing laws. To assist the programme achieve this an early intervention will be conducted by the ESS and Gender Specialists and the technical specialists engaged for the water and food security components at the inception phase. The Cook Islands ESS Policy which is part of TTV will be used. Where relevant, a description of the legal and regulatory framework for any component activity will be required (such as information and knowledge transfer, building permits, environmental permits, construction permits, permits for water extraction, emissions, and use or production or storage of harmful substances). For each activity the description will include the current status, any steps already

taken, and the plan to achieve compliance with relevant national, island government and AF requirements

- *Social considerations*:
    - *Access and Equity* – The close nature of the Pa Enua communities makes it easier to share information and transfer knowledge using mediums like the church, community groups such as, youth and women organizations, disability councils, family groups, disaster risk management committees, fishing and planters associations. The foundation for fair and equitable access to benefits, without impeding access to basic supply of clean water and sanitation, energy, education and safe and decent work conditions, and the right to the land is already in place. The programme, at Inception Phase will demonstrate compliance to AF ESS Policy by describing the process of allocating and distributing programme benefits. It will also state clearly that there will be neither discrimination nor favouritism in accessing programme benefits.
    - *Marginalised and vulnerable groups* - Over 50% of the Pa Enua population is comprised of young children of the age group less than 16 years and the age group 60 plus. Within this group there are people with disabilities and families living with persons with disability, the elderly, children, women and girls, as well as people with very low income and with limited access to resources to help them in their normal everyday living. At Inception Phase, the programme will define the characteristics of marginalised and vulnerable groups in the Pa Enua using categories that define them appropriately. The process will also include identification, and description of impacts that each marginalised and vulnerable group are likely to experience from the programme and how the adverse impacts are to be mitigated.
    - *Public Health* – Access to clean water for cleaning and drinking are vital to public health in the outer islands. The need to keep the surrounding of homes and village areas clear of noxious weeds, litter, and unmanaged rubbish heaps is important to reduce and eliminate breeding grounds for mosquitos, rats and other undesirable pests. The programme will support the tutaka programme (regular health inspection of homes and villages) of the Ministry of Health through its communication and Media Specialist and will enhance the supply of clean water for cleaning and drinking in homes.
    - *Human Rights* – The Cook Islands Constitution Section 64 recognises fundamental human rights and freedom that exist and shall continue to exist without discrimination by reason of race, national origin, colour, religion, opinion, belief, or sex. The programme activities will not engage in any activity that may result in the infringement on the right of any person during implementation.
    - *Gender Equality and Women Empowerment* – The programme activities will be designed and implemented in such a way that both men and women 1) have equal opportunities to participate in consultation, training and awareness activities; 2) receive comparable social and economic benefits; and 3) do not suffer disproportionate adverse effects during the development process. The Gender Specialist will ensure equal participation of men and women during inception phase, and throughout the implementation of programme. Approved and developed gender policies identified in Section D will guide this process.

- *Indigenous People* – Recognition under the Cook Islands Constitution of people of Cook Islands decent is the closest we have in classifying people as 'indigenous people'. The Cook Islands do not use the term 'indigenous Peoples'. In addressing issues discussed as applicable to this principle. The Government refers to the Cook Islands population as having various 'ethnic groups' e.g. Cook Islands Maori, part Cook Islands Maori, Cook Islanders who are born overseas, Asians, Europeans, other Pacific Islands descent. The law of the country applies to everyone in the country whether they are resident or visitor. Describing people in the Pa Enua communities using 'ethnic group' listing help identify and breakdown the population into groups that may help manage their issues. For example, people who are originally not from the Cook Islands may have different needs, or they do not have access to land of their own so their situation may be different. There may be communication issues as a result of people from different ethnic backgrounds. There is a provision under the CIG TTV to carry out a stakeholder analysis and this can also be completed at Inception Phase where various ethnic groups can be identified at project activity sites and their roles in the activity clearly identified.
- *Involuntary Resettlement* – The Programme activities will be designed and implemented in a way that avoids or minimises the need for involuntary resettlement. When limited involuntary resettlement is unavoidable, due process should be observed so that displaced persons shall be informed of their rights, consulted on their options, and offered technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation. This is anticipated in areas where community water tanks are proposed, new roads to access planting lands are proposed, lands are cleared and taken for community gardens, nurseries, and where water reticulation systems are laid. Potential situations can be identified at Inception Phase and using lessons learnt that have been successfully applied to previous projects will guide the programme. An example is the acquisition of land for the Asian Development Bank (ADB) funded Cook Islands Renewable Energy Sector Project for the Pa Enua of the southern group.

- Environmental considerations will include the following:
  - *Protection of Natural Habitats* – The Programme will not involve unjustified conversion or degradation of critical natural habitats, including those that are (a) legally protected; (b) officially proposed for protection; (c) recognised by the Island and national Government for their high conservation value, including as critical habitat; or (d) recognised as protected by traditional leaders and communities. Current procedures for identifying these critical habitats in the Pa Enua include consulting the appropriate National Environment Service (NES) staff and the Cook Islands Biodiversity Database for baseline information before consulting Pa Enua local authorities, traditional leaders and on the ground people with traditional knowledge on important natural habitats.
  - *Conservation of biodiversity* – Clearing of lands that lead to loss of biodiversity through physically removing species and the introduction of invasive species (whether inadvertently or not) are two activities that the programme will be focussed on and intervention will be early in the planning process. Completing NES Environmental Significance Declaration (ESD) assessment form under

the TTV ESS guidelines at Inception Phase by the ESS Specialist will help mitigate any adverse environmental impacts that may arise from the planned activities designed in the programme. As with the above, current procedures for information gathering will be followed.

- *Climate Change* - The programme will not generate significant and / or unjustified increase in greenhouse gas emissions or any other cause of climate change. With the ESS Specialist engaged at inception and during the design and implementation of the programme, activities leading to the release of greenhouse gases such as clearing and burning will be kept to a minimum using composting as an alternative and if required will be addressed early in the programme.
- *Pollution Prevention and Resource Efficiency* – What is important for this programme and covered under this principle is the reduction of waste generation and ensuring burning of fossil fuel and the release of pollutants into the environment is minimal. In the case waste generation, release of pollutants or greenhouse gases is anticipated, the ESS Specialist will prepare a pollution prevention and management plan that prevents pollution using the precautionary approach, evidence-based monitoring, and participation and consultation. The implementation of the plan will be duly documented.
- *Physical and Cultural Heritage* – The programme will avoid the alteration, damage, or removal of any physical cultural resources, cultural sites, and sites with unique natural value, recognized as such by the Pa Enua and nationally. During site assessments, traditional leaders will be consulted to make sure any cultural sites and sites with unique natural values are identified. Prior to any modification of any site, a letter of verification will need to be received from the highest authority on the island with the endorsement of the traditional leaders that a proposed activity will not interfere with any cultural site or site of unique natural value.
- *Lands and soil conservation* – Where land is to be modified for example farmlands on some of the high islands of the Pa Enua (where there is elevation) that may cause soil erosion, standards will be followed to maintain the land in its natural state or as close to its natural state as is possible; and, if land is to be converted, it must promote and protect its current function e.g. sloping lands or forest lands. The programme will also promote soil conservation and prevent degradation or conversion of productive lands, or lands that provide valuable ecosystem services such as water catchment areas where wetlands exist at the outset.

Legal and technical standards relevant to the programme components

Considering the nature of the proposed activities and the need for technical trade and professional services to ensure the sound delivery of technical and information providing services to the projects, the programme will comply with technical standards currently used in the Cook Islands. In the absence of local standards, international standards of accepted organisations, such as the New Zealand and Australian Standards and codes, other organizations including the World Meteorological Organization (WMO), and best practices used, are applied. The following are minimal standards applied to outputs that require technical standards to be complied with:

- Output 1.2.3, the automated weather station (AWS) equipment to be installed on the islands of Suwarrow and Nassau must meet the WMO standards and

regulations for observations and monitoring, conforming to standard practices, procedures and specifications which WMO Members are required to follow or implement in accordance with Article 9 of the Convention. Technical specifications, installation and training of the equipment are provided.

- Output 2.2.2, the water quality-testing programme will follow the approved procedures under the Public Health Act 2004.
- Output 2.2.3, water maintenance training and specifications will follow the New Zealand Standards and codes for water supply (NZS 9201: Chapter 7:1994). All qualified plumbers use this standard for installation, maintenance, training of use and maintenance of water collecting and delivery devices.
- Output 2.2.3, internationally approved and suitable to local condition standards will be used in the procurement of water making equipment and water tanks. The Infrastructure Cook Islands Water Division will be responsible for providing the evidence of the applicable standards and evidence of compliance. The Government Procurement Policy administered by the Ministry of Finance and Economic Management will be used for procurement, which stipulates technical specifications suitable for the Cook Islands.
- Output 3.1.1 and 3.3.3, setting up of nurseries with regards to raising various varieties of exotic vegetables to the respective environment of the northern groups, as well as exotic fruits introduced to the southern group orchard programme, local quarantine protocol will be followed as stipulated under the Biosecurity Act 2008.
- Output 3.1.2 and 3.2.2 construction of garden beds and nurseries respectively will follow best practice using local resources, and for more long lasting beds, the NZS604:2013 Timber Framed Building standard, administered by the Infrastructure Cook Islands Building Inspector Division will be used. NZS4121:1985 Design for access and use of buildings and facilities by Disabled Persons will also be used.
- Output 3.3.3 and 3.3.4, for Aitutaki, Mauke, Atiu and Mitiaro, any works that require significant change to the existing landscapes that have the potential to affect other landowners, through drainage, erosion, flooding, loss of income, will be required to comply with the requirements of the ESD. For Mangaia, this will be the responsibility of the Island Administration to make sure significant activities that change the landscape must assessed by the environmental specialist and a civil engineer to solutions to issues. This can also be achieved through best environmental practice, and following the requirements of the approved National Roads and Road Drainage Policy (2017).
- Component 3 outputs for development of improved farm lands and new farms, all regulations regarding fertilization or waste management will be met.
- The M&E Specialist and Communications, Media and Awareness Specialist will collaborate to design a knowledge management strategy based on the overall objectives and strategic results framework that harmonises and creates synergies among knowledge products and lessons (based on systematic analysis of experiences) of each component.
- Should the final design of each project demand an environmental impact assessment, this will be performed for development of water harvesting systems, irrigation systems, site preparation, and construction of infrastructure and infrastructure related to the early warning systems and the national System for Climatic Data.

Preliminarily Assessments show EIA's may not be required. Given that most of the activities will deliver concrete results on the ground, for infrastructure and major alterations to lands during site preparations, prior to the full design of the solution tailored to specific conditions in each site and for each beneficiary, it is not feasible at this time to provide a final version of:

- A complete environmental and social assessment that consider (i) all potential direct, indirect, transboundary, and cumulative impacts and risks that could result from the proposed project/programme; (ii) assess alternatives to the project/programme; and (iii) assess possible measures to avoid, minimise, or mitigate environmental and social risks impacts for the overall program proposed that was included in section K, as our approximation to complying with the Environmental and Social Policy of the Fund.
- The specific legal and technical standards relevant to each activity will be included for all 3 components. Approximation of the analysis for designing solutions in accordance to relevant technical and legal standards is presented above.

A list of general standards/regulations/guidelines/instruments which are foreseen to be referenced for compliance by overall programme components is included as follows:

- National policies on development, climate change and disaster risk management
  - Cook Islands Constitution (with Amendments Incorporated), reprinted as of 21st December 2004.
  - Te Kaveinga Nui - National Sustainable Development Plan 2016 – 2020
  - JNAP II – Are we resilient? The Cook Islands 2nd Joint National Action Plan (A sectoral approach to climate change and disaster risk management) 2016 – 2020
  - National Disaster Risk Management Plan 2017
- Sector policies
  - Cook Islands National Water Policy 2016
  - Cook Islands Sanitation Policy 2016
  - National Roads and Roads Drainage Policy for the Cook Islands (2017)
  - National Agriculture Policy 2017 – 2021 (April 2017)
  - Agriculture Food Security and Nutrition Resilience (2017)
  - Cook Islands Renewable Energy Sector Project (CIRESP)
- Environment policies
  - Te Tarai Vaka Cook Islands Environment and Social Safeguards Guidelines
  - National Environment Strategic Action Framework
  - Environment Act 2003 and regulations
  - Environmental Management Plan
  - National Biodiversity Strategy and Action Plan
  - Waigani Convention for Transporting Hazardous Waste
- Social policies
  - Cook Islands National Policy on Gender Equality and Women's Empowerment, Strategic Plan of Action 2011 – 2016
  - The Public Health Act 2004
  - Cook Islands Disability Inclusive Development Policy & Action Plan 2014-2019
  - Disability Act 2008
  - Cook Islands National Youth Policy (draft)

- Cook Islands National Children's Policy (draft)
- Rau Ti Para Policy on Aging (2012-2017)
- Employment Relations Act 2012
- Employers Liability Insurance Regulations 1965

- Others
  - Tender document for the 'Supply of automated weather systems, and Training in installation, operation and maintenance of AWS in the Pa Enua'
  - Tender document for the "Mitiaro Household Water Tanks Project: Supply and Delivery of Materials"(January 2017)

F. Duplication of Programme with other Funding Sources.

Table 4 presents related programmes and or projects that have synergies or complementary with this AF Proposal.

Table 4: Synergies and Complementarities with the AF Proposal

Initiative	Status, results, limitations	Complementarities with AF Proposal
Akamatutu'anga I te iti Tangata no te tuatau manakokore ia e te taui'anga reva Strengthening the Resilience of our Islands and our Communities to Climate Change (SRIC – CC)	The aim of the SRIC programme is to strengthen the ability of all Cook Island communities, and the public service, to make informed decisions and manage anticipated climate change driven pressures (including extreme events) in a proactive, integrated and strategic manner. It contributed to all outcomes listed within the 2 objectives of the Adaptation Fund Strategic Results Framework (AFB/EFC.2/3 from 31 August 2010), and corresponds particularly to the following higher order fund-level outputs: *Output 1.1.* Risk and vulnerability assessments conducted and updated at national level; *Output 1.2* Targeted population groups covered by adequate risk reduction systems; *Output 1.3* Targeted population groups participating in adaptation and risk reduction awareness activities; and *Output 2.2* Vulnerable physical, natural and social assets strengthened in response to climate change impacts, including variability. *Output 2.4.* Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability.	The AF Proposal builds directly on the results of the SRIC programme including lessons learnt from the reports and assessments carried out during SRIC project implementation. A number of mainstreaming reports were completed including adoption of CC policies in specific Areas. An example is the Meteorological Service CLEWS project, which was installed and the AF proposal will operationalize this component ensuring that training and capacity building in order to understand weather information that is being monitored. Important for the AF proposal is to ensure that resilience is further enhanced and ensuring that trigger actions are understood and implemented in times of emergencies. The AF proposal is

Initiative	Status, results, limitations	Complementarities with AF Proposal
	The SRICC CC programme has partnered with EMCI in carrying out the mandate of the Disaster Risk Management National Action Plan, in the development of the Disaster Management Plans for each Island in the Pa Enua. SRIC has implemented water security projects in the Pa Enua (except Mauke, Nassau and Penrhyn) including water tank upgrades, household water tanks, purification/filter, and roof repairs. The range of food security and economic resilience projects funded by SRIC include arts and crafts as potential income generation from visitors, , agriculture (communal hydroponics and fencing, wood chipper, worm farm, taro drainage/growers, school communal garden with fencing, Young Farmers project for vegetables, coconut tree-banding programme, which protects the coconut trees from pests and rats, egg and duck farming), marine projects (safe/secure moorings, life jackets, fishing boat/trailer, boat, vaka canoe, causeway project, outboard motors,), pearl biologist, coconut virgin oil production, signage boards for cultural heritage and tourism sites, sawmill project. With Ministry of Agriculture, SRIC funded engagement of Mauke, Mitiaro, Mangaia, Atiu and Aitutaki Island authorities on Agriculture Food Security and Nutrition Resilient partnership.	designed to further enhance and build on previous work completed by EMCI and drive early warning and information systems. Populating the EMCI Geo-portal, engaging appropriate expertise that will continue to disseminate and train island governments in preparedness and monitoring risk. This proposal will integrate the water infrastructure projects of SRIC in water modelling to assess water system resilience of each island. The AF proposal will include the impact of SRIC projects and output of the Agriculture Food Security and Nutrition Resilient strategy in assessing food security and economic resilience and adopt lessons in project development and implementation for the Economic Resilience Fund.
Green Climate Fund Readiness and Preparatory Support Proposal	The Cook Islands submitted the third request for Readiness Support to the Green Climate Fund (GCF). This is to continue to build on the work of the first National Designated Authority (NDA) Strengthening readiness support (12 months). This request will strengthen the capacity of the NDA and the Ministry of Finance and Economic Management (MFEM) by retaining the current NDA Advisor and the National Programme Development Manager to continue progressing the GCF engagement in	The AF proposal will be supported by the efforts and the expertise provided by this project and ensure that the training and strengthened capacity of government institutions will also add value to this proposal.

Initiative	Status, results, limitations	Complementarities with AF Proposal
	the Cook Islands. This request will also include the preparation of a national country programme and will support the Cook Islands pursuit of Direct Access through accreditation of national direct access entities. The NDA would also like to carry-out training for the NDA and MFEM, through the hiring of a consultant, to develop strategic frameworks and a Country Programme through the use of the tools developed by the GCF with the necessary linkages to existing national policies such as the National Sustainable Development Plan (NSDP) 2016-2020, the national Climate and Disaster Compatible Development policy and the Joint National Action Plan for Climate Change Adaptation and Disaster Risk Reduction (JNAP) which is the country's equivalent strategy to the National Adaptation Plan. It is also envisaged that the consultant will develop a manual aimed to provide the reader with the step-by-step approach to develop a country programme tailored, and relevant to the Cook Islands. The NDA will communicate this work by hiring of a consultant with the expertise in developing communication products.	
Building Safety and Resilience in the Pacific (BSRP) EDF 10 Intra-ACP-EU	The BSRP project is dedicated to help build resilience to disaster and climate change for communities, governments and countries across the Pacific region through practical ways to prepare, respond and recover from disaster. It is a €19.36 million project supported by the European Union and implemented by the Pacific Community (SPC). For Cook Islands, BSRP completed a number of risk reduction projects and will fund DRM Training programme for women, people with disabilities for each island, enhancing capabilities of Geo Portal, strengthening building code for disaster risks, establish or strengthen	The AF Proposal will build on the work of the BSRP and will further support the harmonisation of Government information systems such as GIS and asset management system with Cook Islands Investment Corporation.

Initiative	Status, results, limitations	Complementarities with AF Proposal
	the Emergency Operating Centre in each Puna and develop/conduct early warning public awareness programmes for the general public, school children and vulnerable groups	
Disaster Resilience for Pacific SIDS (RESPAC) UNDP Pacific Office	The goal of the project is to 1) Strengthened early warning systems and climate monitoring capacity in selected PICS 2) Preparedness and planning mechanisms and tools to manage disaster recovery processes strengthened at regional, national and local level 3) Increased use of financial instruments to manage and share disaster related risk and fund post disaster recovery efforts.	The AF proposal recognises that this project will include the Cook Islands however EMCI has yet to provide a proposal for consideration by UNDP. In all respects this project would complement the work of the AF proposal.
Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) SPC, World Bank, ADB and GFDRR	The project was established to provide "better risk information for smarter investments" as well as enhancing the financial resilience of Pacific Island Countries against natural disaster and climate risk. Established in June 2016 by legal statute in the Cook Islands. The PCRAFI Facility provides the Pacific Island countries with climate and disaster related insurance in an effort to increase their financial resilience against climate and disaster risks.	The AF proposal will advance the information provided to substantiate further investments in risk reduction and preparation.
FinPac funding (Finland Meteorological Services through SPREP)	In 2015 a 2-year FinPac pilot project titled "climate resilient community" was completed in the village of Tautu, Aitutaki carried out by CI Red Cross. Activities were: 1. Roof tie down using galvanised wire 2. Strengthening & equipping of the two evacuation halls including the setup and equipping of a separate EOC room attached to the main hall Community workshop on climate change – Dr Teina Rongo 4. Including training on weather & climate information – so the community understands the weather report on radio/newspaper/TV 5. Signboards on wind speed & actions to take, a tsunami evacuation route signboard	The AF proposal will extend the FinPac pilot to other islands in the northern group and the remainder of the northern group

Initiative	Status, results, limitations	Complementarities with AF Proposal
	6. Distributing IEC on climate change etc. to all households including cyclone-tracking maps to assist communities in visualising the location of the cyclone as broadcasted on radio etc. 7. Village siren installed & tested with an evacuation drill twice in the one year. 8. Water tanks for the two evacuation centres. A lot of the activities are now being rolled out to other pa enuas; currently the roof tie down in Mauke, early warning workshop & development of signboards in Atiu. Roof tie down for Rakahanga will happen in September and to include Vaipae in Aitutaki in the new year. j	
Disaster Risk Modules, National Disaster Management Office (NDMO)	Disaster Risk Management training programmes by EMCI, the Cook Islands Red Cross Society and International partners has provided representatives from Government and Private Organisations within the Cook Islands the capability to design and exercise DRM plans and procedures within their organisations. Training courses developed by EMCI include: Emergency Operations Centre (EOC); Introduction to Disaster Management (IDM); Initial Disaster Assessment (IDA); and Geographic Information Systems (GIS)	This programme will build on the lessons learnt and good practices from these activities. These will be included in the training and other knowledge management materials the AF proposal will produce
Northern Islands Water Project (Phase 2) - GIZ	The outcomes from this project include community rain water harvesting structures/infrastructure at targeted locations are repaired and a model of integrated water management established for the northern islands which applies a forward looking whole of community approach to improve the resilience of the communities on Nassau, Palmerston and Penrhyn to natural disasters (including drought). This involve: • Increase rain water harvesting (repair of community buildings) and rain water storage capacity	The AF proposal will work closely with this project to build on effective island water management system for replication in other islands.

Initiative	Status, results, limitations	Complementarities with AF Proposal
	(repair of community water tanks) • Raise community awareness in water safety/management and drought response • Establish a water usage monitoring system that can be managed by and incorporated into the local government work plan	
Strengthening Water Security of Vulnerable Island States in the Pacific - NZMFAT	The project is being implemented by the Secretariat of the Pacific Community (SPC) across the Pacific Island Countries of the Cook Islands, Kiribati, Republic of the Marshall Islands (RMI), Tokelau and Tuvalu through a suite of practical measures to strengthen drinking water security with the aim of engaging and supporting government, local authorities and vulnerable island communities to build the skills, systems and basic infrastructure to better anticipate, respond to, and withstand drought and other events that threaten water security.	The AF Proposal will work closely with this project to adopt best practices such as island drinking water safety plan/implementation and drought threat assessment/ management to be integrated with water management system
NZ VSA Water Engineer Assignment to Office of the Prime Minister	The assignment goal of a number of engineers (4 to-date) over a period of time is strengthen the capabilities of the Office of the Prime Minister (OPM), Pa Enua Governance Unit (PEGU) and, Climate Change Division (CCD) and Infrastructure Cook Islands (ICI) to improve water supply systems on the 11 Pa Enua (Outer Islands). Technical water engineering include water tank repairs and waterproofing tank lining, water storage alternatives, pump specifications, water gallery development, well pumping tests, wastewater treatment, solid waste management, asset management of roads and drainage structures.	The AF Proposal will seek technical expertise from the VSA water engineer on water modelling to assess water system resilience of each island.
NZ MFAT Cook Islands Water Shortage Response	Between 2013 and 2015, this funded the provision of equipment, technical assistance and approved operational support required by the Cook Islands Government to respond to emerging water shortages on islands of the northern group, and two islands in the northern group.	The AF proposal will incorporate the lessons and implement some key recommendation from this programme such as build and test capacity of IGs to implement the drought

Initiative	Status, results, limitations	Complementarities with AF Proposal
		plans, institutionalisation of local water supply systems to facilitate monitoring and reporting, conduct capacity building activities for relevant IG water workers on weather/climate monitoring including the use of appropriate tools to track changing weather situations
Japan Embassy Aitutaki Community Tank Repairs and Upgrading project	The Japan Embassy funded community tank repairs in Aitutaki (unrepaired after Cyclone Pat of 2010) to provide additional 0.45m litres of potable water to augment ground water source that was perceived to be salty.	The AF proposal will review lessons on community tank repairs from this project.
NZ MFAT Northern Group Rainwater Harvesting Project (Phase I)	This project provided a reliable and safe water supply for the islands of Pukapuka, Nassau, Penrhyn and Rakahanga to improve resilience against natural disasters and public health. Completed in 2013, this included 1.78m litres of water storage, replacing 10,000 lineal meters of roof and 2,900 lineal meters of fascia and spouting.	The AF proposal will build on the lessons and good practices from this water project and apply them in implementing the Water Security Fund.
Conserving biodiversity and enhancing ecosystem functions through a “Ridge to Reef” approach in the Cook Islands GEF/UNDP	The Ridge to Reef project will ensure effective conservation of biodiversity, food security and livelihoods and the enhancement of ecosystem functions that contribute to food security and livelihoods within the Cook Islands Marine Park (CIMP covering over half of EEZ). The project will support the Government in tailoring policy, regulatory and institutional frameworks to suit the specific characteristics of the Cook Islands and of the new CIMP. From a site centric approach, a holistic “ridge to reef” management approach, activities in the immediate production landscapes adjacent to marine and terrestrial protected areas will be managed to reduce threats to biodiversity stemming from key production activities (tourism and agriculture). The project will support	The AF Proposal will coordinate with this project to align and leverage with island conservation strategies for food security and economic resilience projects.

Initiative	Status, results, limitations	Complementarities with AF Proposal
	Ridge to Reef management interventions on the six inhabited Outer Islands within the CIMP: Aitutaki, Atiu, Mangaia, Mauke, Mitiaro and Palmerston in the form of Island Conservation Strategies which will constitute the environmental components of each island's Island Development Plan.	
FAO Agribusiness and Agriculture Value Chain Investment Support and Agribusiness Investment Support implemented by the Cook Islands Chamber of Commerce	Letter of Agreement in 2014, partnering to strengthen the capacity and increase finance and investment into agriculture with a focus on agribusiness and value addition. The activities carried out under the partnership were very successful and promising. Among the results, the following were the most relevant: (i) 11 agribusinesses (tropical orchards, processing centres, organic farms, greenhouses) were established through a new small matching grants facility; (ii) 24 agribusinesses were strengthened through mentoring and training, and improved their businesses' scale and revenues; (iii) new investments into agriculture were made to match the grants; and (iv) youth groups were trained on business and were awarded by the Bank of Cook Islands with further grants.	AF proposal will build on lessons learnt on Rarotonga and replicate the work of the horticulturalist in the Pa Enua. As well ensure that the criteria for support to agribusinesses is identified early and supported if considered sustainable.
Pacific Adaptation to Climate Change (GEF, AusAID, UNDP, SPREP)	Working in 14 Pacific island countries, this completed programme demonstrated best-practice adaptation in three key climate-sensitive areas: coastal zone management, food security and food production, and water resources management	The AF proposal will build on the adaptation lessons as appropriate for the Pa Enua context in the areas of: Food security/ production - Fiji, Palau, Papua New Guinea and Solomon Islands applied 'no regrets' adaptation measures such as sustainable farming methods (maintain soil health, use water efficiently, respect and promote biodiversity, and produce good

Initiative	Status, results, limitations	Complementarities with AF Proposal
		yields under current climate variability), climate-resilient crops (e.g. salt tolerant varieties), and training in food processing and preservation; mainstreaming of climate risk into food and agriculture sector policy Water resource management – adaptation measures demonstrated include upgrading water infrastructure to improve water capture and storage, increasing the options for sourcing water, and improving water quality. Adaptation measures demonstrated by the projects include upgrading water infrastructure to improve water capture and storage, increasing the options for sourcing water, and improving water quality. Climate analysis, socio-economic assessment and cost-benefit analysis are essential for planning. Strengthening water governance is also vital such as mainstreaming climate change into national water policy and planning, as well as improving practical water management at

Initiative	Status, results, limitations	Complementarities with AF Proposal
		national and community levels
UNDP/GEF SGP in FSM: Let's Go Local	The completed Island Food Community of Pohnpei (IFCP) Let's Go Local! initiative, supported by the GEF Small Grants Programme (GEF SGP), addressed the problems of shift from traditional foods to imported processed foods (health crisis and environmental problems including biodiversity loss, waste management and food insecurity).by promoting and facilitating the increased production and consumption of traditional food crops, for their health benefits, while protecting biodiversity and improving livelihoods.	The AF proposal will build on the lessons of Let's Go Local: as determined appropriate by the Ministry of Agriculture • Find out about traditional foods and diets from elders • Use scientific data (e.g. food analysis, food composition tables) to show the value of local foods • Participatory approach involving the community • Conserve traditional crop germplasm through in situ gene bank with conservation sites in various villages.

Table 5 presents the Agencies and Ministries who will be responsible for the related programmes/projects and will continue to be involved with this AF Proposal.

Table 5: Agencies and Ministries responsible for AF Proposal

Agency or Ministry	Status	Role with AF Proposal
Climate Change Division Office of the Prime Minister	In 2011 Climate Change Cook islands (CCCI) as a division of the Office of the Prime Minister (OPM) was established with the transfer of the operational focal point functions from the National Environment Service (NES). All international, regional and national climate change matters are managed, overseen and coordinated by CCCI. Key functions and programmes identified in the OPM 2017/18 business plan include the following: • Governance • Developing and contributing to Policy, Planning and Legislative	The CCCI division will have general oversight for the AF proposal and the Executing Agency and monitor all appointments, implementation activities and ensure work plans and schedules are met. The CCCI will ensure that the AF proposal draws from experiences from other initiative and link with them while avoiding duplication,

Agency or Ministry	Status	Role with AF Proposal
	Frameworks • Resource mobilization (e.g. funding/human capital/natural resources/equipment) • Mainstreaming and integrating climate change related activities into government procedures • Strengthening governance arrangements for climate change; • Providing advisory services • Education Awareness/Capacity Building/Communications/Research • Improving climate change knowledge • Strengthening capacity development efforts to address climate change impacts • Supporting and undertaking relevant research efforts; • Communicating effectively climate change matters to an array of audiences. • Programs/Projects/Partnership PPP's Partnerships • Implementing and coordinating relevant projects International/Regional • Coordinating participation and input into relevant regional and international meetings • Reporting on progress in fulfilling obligations under the United Nations Framework Convention on Climate Change (UNFCCC) The Ministry of Foreign Affairs and immigration (MFAI) are the political focal point for CC, DRM and Development.	effective coordination with other relevant initiatives will also be ensured through existing project and programme coordination mechanisms.
Emergency Management Unit, Cook Islands (EMCI)	Established in 2006 under the Office of the Prime Minister, Emergency Management Cook Islands (EMCI) coordinates all DRM activities and provides policy advice to the National Disaster Risk Management Council (NDRMC). The NDRMC is chaired by the Prime Minister. EMCI key outcomes include national data and information centre for informed decision making and fast response to disasters, strong systems for inter-agency coordination of disaster, prepared/well informed communities for natural and other	The AF Proposal Component 1 will require EMCI to be the lead implementing agency EMCI will build capacity in the Pa Enua to operationalise the DRM plans

Agency or Ministry	Status	Role with AF Proposal
	disasters, Strategic Road Map for Emergency Management for the Cook Islands, and review of DRM Planning across all sectors	
Cook Islands Meteorological Service	The Met Service provides the latest weather updates, forecasts and warnings for the Cook Islands through a network of AWS in all islands.	The AF Proposal will coordinate closely with the Met Service for the procurement of AWS for Nassau and Suwarrow and the development of weather data into usable formats to be managed with the ARC GIS and widely disseminated to various sectors.
The Cook Islands Red Cross (CIRC)	The Cook Islands Red Cross (CIRC) has been officially recognized by the government as a voluntary relief organization auxiliary to the public authorities and as the only National Red Cross organization on its territory. The society maintains its autonomy and acts at all times in accordance with the Fundamental Principles of the Movement. The general objectives set out in the constitution are to prevent and alleviate suffering with complete impartiality, making no discrimination as to nationality, race, sex, religious beliefs, class or political opinions. The organization has a high profile in the country and is well respected at all levels due to its work in all areas. The CIRC has five branches, all of which are in the southern group of islands, and a headquarters in Rarotonga. One of these branches is the junior Red Cross. Only two islands in the northern groups have been visited for first-aid training and they are considering forming branches. Two of the branches have been provided offices by the local island council and the government. Volunteerism has not been easy to promote, so constant communication and encouragement from headquarters is necessary. Ongoing training in first aid and disaster preparedness is a way of keeping volunteers.	The AF proposal will build directly upon the CIRC's continuing work in training for water security as well as reviewing each Pa Enua DRM plan. The AF proposal will coordinate with Red Cross WASH programmes in sustaining water infrastructure and designing effective island water policies and systems. CIRC will also support the reviewing of Island DRM plans.

Agency or Ministry	Status	Role with AF Proposal
	Reviewing and strengthening each Pa Enua DRM plan. A pilot of this activity is currently being run in Atiu in partnership with EMCI. Activities in the Pa Enua focus on support to existing infrastructures put in by other agencies e.g. water tanks. WASH programme expands to water tank maintenance for quality water for all homes; hygiene promotion around clean/safe water storage (includes water testing), handwashing/ sanitation practices. Currently, planning for "first flush systems" for islands that don't have them.	
Office of the Prime Minister, Pa Enua Governance Unit	The OPM Governance Unit contributes to the fulfilment of OPM's obligations and objectives under the Island Government Act 2012-2013. The Unit supports ongoing service delivery, Regulatory, Governance/Oversight Responsible for the recruitment process of Executive Officers on all islands in the Pa Enua Contracted a Manager for SPC Water Security Program and commenced programme implementation. The achievements of this unit relate to ensuring governance in the Pa Enua ensuring that work related to NSDP Goal 4 and water security is achieved.	The AF proposal and Component 2 will be the responsibility of the Water Committee that will be coordinated by the OPM office and the Pa Enua Governance Unit.
Ministry of Agriculture	The National Agriculture Policy 2017-2021 recognises the major role the agriculture sector plays in sustaining the development of the tourism sector and the social, economic and environmental well-being of the Cook Islands. Underpinned by social, economic, environmental and cultural principles and pillars and the goal more resilient agricultural sector, the seven policy objectives are; Food Security & Nutrition; Enabling Environment; Market Efficiency and Trade access; Science, Research & Technology; Human Resource Development; Biosecurity; and Climate Change and Disaster Risk Resilience. To promote household and national	The AF proposal will align with the National Agriculture Policy particularly policy objectives on Food Security & Nutrition and Climate Change and Disaster Risk Resilience. The MoA will be the lead agency for Component 3.

Agency or Ministry	Status	Role with AF Proposal
	food security for the Cook Islands, measures include increase overall food production including nutritional crops, better linkages between farmers and hotels/restaurants and crop/livestock diversity. To assist producers to adapt and strengthen their resilience against climate change and disaster risk, measures include management of risks associated with food standards, pest and disease outbreaks, invasive species and natural disasters, effective early-warning and mitigation systems and improve access to seasonal forecasts for farmers, resilient food crops that are tolerant to the impacts of climate change and promote traditional and organic growing techniques for taro and other traditional crops for times of emergency, national and community based disaster management plans specific to the agricultural sector.	
Ministry of Education	Agriculture such as vegetable garden in schools could respond to aspects of the Science Curriculum, Social Science Curriculum and the Health and Wellbeing Curriculum. From Social Science, objectives include: People access manage and use resources to live; People participate in various economic activities. From Science, objectives include Describe ways in which living organisms grow, reproduce and change; Investigate relationship between structure and function in living things; and Research and investigate a local ecosystem. From Health and Wellbeing, outcomes include: Understand the relationship between nutrition and wellbeing; Select, prepare and preserve food; and Develop healthy eating practices.	The AF Proposal will work with Ministry of Education to build school gardens, conduct training and curriculum resourcing.

G. Learning and knowledge management to capture and disseminate lessons Learned.

Knowledge management is an important part of this programme. The entire focus of the programme hinges on ensuring any information, practices, data, images and design drawings important for the programme and its success is managed and or where required are disseminated effectively to targeted stakeholders. The

fundamental overarching requirement for this programme is to ensure there is established a comprehensive central government database – Arc GIS PORTAL – that will contain all national data including the data collected for each of the components. The central database, Arc GIS, through the National GIS Taskforce, will then give permission for agencies and/or Ministries to further analyse and filter the information using their own portals that will be further strengthened and or developed during project implementation. This includes:

- Geo Portal for Emergency Cook Islands,
- Water Portal for Infrastructure Cook Islands and
- AgINTEL for the Ministry of Agriculture.

Other agencies will also have permission to access this data for whatever purpose such as Statistics Office, Ministry of Justice and Ministry of internal Affairs. The strengthening of the National GIS Taskforce will further support the sharing of this information as determined and outlined in the CSDS.

It is expected that centralising national data, the development of management response tools and allowing the filtering of information to sector agencies and pushing sector relevant information and alerts (through Apps) will not only build on the adaptive capacities of the communities concerned but will enhance the communities' understanding of climate change and its impacts in its many forms and help convince the island residents on the need to participate fully in the adoption of best practices to bring about the best outcomes for the community. It will also facilitate replication from one island to the next as well as replication of best practices and successes. The central data will also have the ability to conduct spatial analysis and create maps that can be included in periodic reports. This will contribute to the monitoring and reporting by tracking progress, and will strengthen the scientific foundation of the learning and knowledge management under this programme.

The required programme design parameters for each component and the information generated will be documented and disseminated to the relevant stakeholders including the community stakeholders. To oversee this work, the National Implementing Entity (NIE) will contract a short term Monitoring & Evaluation Specialist and Communications, Media and Awareness Specialist. The Specialists will collaborate to design a knowledge management strategy based on the overall objectives and strategic results framework and that harmonises and creates synergies among knowledge products and lessons (based on systematic analysis of experiences) of each component. The Strategy will assist the NPM and Project Coordinator to communicate effectively, support the delivery of core organisational objectives and share knowledge. The Strategy will include knowledge sharing toolkit, press and public relations plans, as well as web strategies that can be easily understood in both Cook Islands Maori and English and a monitoring and evaluation plan.

For each component there will be activities and some of the data outputs which will have initial oversight by the component specialist to be shared with stakeholders and community are listed below:

Component 1: Three year work plan, baseline data and information mapping collected on each island, mobile applications for GIS data collection, National and

Local disaster risk reduction strategies and plans, Disaster Response Plans, Access information from the Geo Portal, Training materials for DRM and Response Plans, warning systems

Component 2: Three year work plan, Island Water Infrastructure Assets, Island Household water tanks, Training materials for water tank maintenance and sanitation and hygiene Water Security Plans, Drought Plans including water conservation strategies.

Component 3: Three year work plan, Shade house plans, School Agricultural Programme, Mulching and composting plan, Island Agricultural equipment plan, Fruit Tree trimming plan, Training materials for various crops, AgINTEL information, E-Agriculture

Lessons learnt will be disseminated in particular to Government institutions, to ensure that the Government takes full advantage of this programme and is able to replicate its successes on a wider basis after completion. The knowledge management approach will be two-pronged. On the one hand, the programme develops skills and knowledge for socio- economic activities and scenario-based planning using management tools developed within each component that are essential to achieve the Programme outcomes. The programme will also generate field-based experience of local adaptation measures that will be captured in the national policies and social protection and development programmes.

This Programme will serve as an experience that will generate foundational capacities and develop basic tools and information to ensure that climate risks are incorporated into water and agricultural management planning and investment processes for the Pa Enua. The capacities of local institutions and local governments will also be developed in a range of adaptation responses within an integrated package as the various sector plans are formulated, prepared and implemented and reviewed further. The lessons learnt from the Programme, will be used to improve knowledge and institutional capacity for coordination, management, especially management of water and agricultural resources and diversification of livelihoods and most important preparedness for disasters in the Pa Enua.

The programme will employ various learning tools and different methods of knowledge dissemination such as:

- Local media news items in local language;
- Documenting success stories – showing results and best practices
- Public debates, focus group sessions;
- Briefs with the relevant sectors and Island Governments e.g. agriculture, and water officers on each island
- Awareness actions for all sectors
- Best practice guidance materials and tools;
- Websites and social media

Implementation of concrete adaptation actions on the ground will constitute the primary learning experience, which will feed into all awareness, training and knowledge management actions facilitated and conducted by the programme. Apart from consultative face-to-face meetings and interactive events, the programme will

also prepare knowledge management materials on climate change resilient water and agriculture management and livelihood diversification activities. Key findings will be prepared in a format for dissemination to key stakeholder audiences. It is also envisaged that a number of training and consultation events will be held under the various component work-streams, and the outcomes of these events will be captured.

Internal communications between the relevant stakeholders and parties will be important and an ongoing part of the programme. This is critical to ensure a planned approach to the project delivery. The main purpose of this is to create awareness and reconfirm to the stakeholders and to those interested in the programme of their roles and to inform them on the progress of the project to ensure effective and timely delivery of the project targets. This will involve visiting the islands, undertaking the necessary engagements including general community consultation meetings. Communications will be conducted through the appropriate channels especially with the Island Governments via the Executive Officers who will organise the works and activities on the ground.

H. Consultative process

This programme undertook intensive consultations during the preparation of this proposal. The consulting team (Team) were contracted to complete the AF proposal from 27th April to August 2017 ready for submission to the AF. Although the timeline appears to be short the Team included two well qualified Cook Islands professionals, together having over 20 years' experience as experts in this area and are both familiar with the development and design of previous climate change projects as well as advising and supporting similar Government and Pa Enua Projects. The team met regularly with the MFEM (NIE) and the OPM (CCCI and SRIC team) to ensure that there was a clear understanding of the requirements of the AF process and the direction and focus of the AF programme was taking and whether this was consistent with Government priorities and if changes were required. It was important for the team at this time to also understand and confirm the areas that were being covered by the former programme SRIC and to ensure that there would be no overlaps and duplication because the target audience and beneficiaries were one in the same recognising that this AF proposal would enhance and build on the SRIC programme.

The initial task for the consulting team was to discuss the priorities and outcomes of SRIC with the Mayors and Island Councillors on each of the Islands by telephone and skype. It was confirmed by each of the Mayors and Councillors from the islands that SRIC was very successful for the island and advised the team of the priorities that should be considered under the AF proposal. A record of the priorities was included in the presentations to the NIE and OPM SRIC team and later provided at the CC Platform meeting on 9 June 2017. These priorities were also noted in the Island Profiles Annex 1. Soon after the consultations with the Mayors a skype call was held with United Nations Development Programme (UNDP) Samoa to confirm progress of the SRIC programme and provide comments and thoughts on the proposed AF proposal. These consultations confirmed for the team the focus of the proposed AF Proposal.

During the remainder of the Team's time, of approximately 12 weeks whilst the AF proposal was being prepared, the team had informal discussions, consultations (one on one, group meetings and telephone calls) as well as extensive email contact with all agencies that would be involved in the implementation of the programme, proposed beneficiaries, women's groups and vulnerable groups. There were a number of formal meetings with the SRIC team, OPM Pa Enua Governance Division, Ministries and agencies, NGO's and women's groups on Rarotonga, as well as island residents, island Mayors or councillors who were visiting Rarotonga. All these discussions were considered important in the development and design of the programme and components including consideration of who or what agency would lead the AF proposal implementation. Lessons learnt from SRIC were important considerations during this time. This was also the first AF proposal by the Cook Islands as the NIE. The administration and role of the NIE became an important discussion with the outcome of these discussions included and discussed in Part III: Implementation Arrangements.

The quarterly Climate Change Platform meeting held on 9 June 2017 was the first meeting where the Team were able to meet all climate change stakeholders including NGO's and all related Ministries and agencies including the NIE, Executing Entity (CCCI and OPM) at the same time. This meeting provided an opportunity for the Team, to present the draft Programme and the proposed Components and to gather views on the scope of the programme. The Platform broadly supported the three components and the main outputs for each component and it was agreed that further discussions and meetings with each of the component lead agencies would be held over the next month. The Team's presentation is provided as **Annex 3.**

The final stakeholders meeting to discuss the programme components was held on 11 July 2017, to confirm and receive feedback on the draft final programme components, outputs, activities, strategic results framework and budget. The meeting included representatives of all the agencies that were identified as having an important and crucial role in the implementation of the components when funding was received. At this stage, the Team considered, because each component had a lead agency it was important that the agency or Ministry should lead and explain each component as designed and take comments as well as lead the discussion from the floor. This provided all those present to accept that the Agency or Ministry identified in each component took ownership of the component and the activities as they were designed. The outcome of this meeting was very positive with minor changes required by the team. This was followed by individual meetings with the lead ministry/agency for each component which resulted in refinements to the component and the budget resourcing.

The Team were not provided resources for travel to the Pa Enua for face to face consultations. However, it was intended that the earlier meetings and consultations held since the Brilliant Resilient National Seminar from 23 – 27th May 2016 over the past 15 months by the agencies responsible for components 1, 2 and 3 (Climate Change Cook Islands, Emergency Management Cook Islands, Pa Enua Division of the Office of the Prime Minister, Ministry of Agriculture, Cook Islands Red Cross) would be sufficient for background information and would inform the preparation and design of the Programme. This would be supplemented by telephone and face to face consultations on Rarotonga.

Three national workshops (one for each component) will be conducted as part of the programme inception phase. Each national workshop will bring together island government and community representatives to discuss and confirm project design, implementation programme for each island for each component as well as identification and management of ESP risks. The three national workshops will each be undertaken by the NIEU, PMU and agency responsible for the component:

- Component 1 - EMCI
- Component 2 - Pa Enua Division of the OPM, ICI
- Component 3 - MoA

The national workshop will be supplemented by island community meetings when the component executing agency and and the ESS, Gender and M&E specialists conduct their initial programme visits to the Pa Enua.

A summary list of the number of meetings and

Table 6: Summary list of meetings and consultations

Meeting	Date	No. of Participants	Male	Female
Phone Consultations with island mayors and/or executive officers for island priorities on climate change resilience and disaster risk management	May 2017	**10**	9	1
Climate Change and Disaster Risk Management Platform Meeting	9 June 2017	**31**	10	21
Programme components workshop	11 July 2017	**22**	16	6
Brilliant Resilient National Seminar	May 2016	**123**	65	49
Consultation Meetings held in the Pa Enua by Agencies and Ministries that will lead the Programme Components				
Atiu Island DRM Review & Training	21 June 2017	**13**	12	1
Atiu Island DRM Review & Training	20 June 2017	**15**	12	3
Food Security Resilience Workshop on Sustainable Environmental Management for Climate Change, Mitigation and Risk Reduction Preparedness	12 - 16 May 2017	**35**	25	10
Tongareva OPM Water Security Survey Workshop	15 March 2017	**49**	29	20
Climate change and disaster risk platform meeting	17 June 2016	**20**	4	16
Operationalization of the Island Drought Management Plans – ATIU	4-8 April 2016	**23**	16	5
Operationalization of the Island Drought Management Plans – MAUKE	29-31 March 2016	**27**	25	2
Climate change and disaster risk platform meeting	15 March 2016	**26**	14	11
Operationalization of the Island Drought Management Plans – MITIARO	1-3 March 2016	**34**	21	5

Operationalization of the Island Drought Management Plans – MANGAIA	15-19 February 2016	**18**	14	1
Mangaia Raurau Akamatutu Workshop	27 – 30 June 2016	**20**	7	5
Total		**466**	**279**	**156**

consultations held by the agencies and Ministries during this period, with total number of participants including number of females is provided as
Table 6 with the detailed consultation list of participants provided as **Annex 4**.

Related to the preceding table, the remainder of this section is an overview and summary of the various consultations held by the Agencies and Ministries who will lead the components for the programme. The information is not intended to be exhaustive but provides a short precis that highlights ongoing concerns, issues and requirements by Pa Enua communities that have been considered during the preparation of the AF proposal including the special needs of the vulnerable in the Pa Enua.

Phone consultations with Mayors and priorities discussed are included in the Island Profiles Annex 1 and the presentation to the Climate Change Platform Meeting **Annex 3.**

The “Brilliant Resilient” national seminar held in May 2016, on disaster risk and climate change resilience was attended by government officials, island governments and administrations, NGO’s, CSO’s and the private sector and the outcomes provided input into the direction of JNAP II. After the seminar, a Technical Working Group (TWG) was formed to provide technical advice to and support the development of JNAP II. The TWG and various agencies worked in partnership on the engagement process and drafting of the JNAP II. The initial JNAP II consultations took place on the first two days of the week-long seminar resulting in the creation of the three thematic areas and what was initially ten sector strategies. The specific actions and activities of the JNAP II were formulated from national policy and planning documents including, the original JNAP, national policy suite, ministry business plans and from the input of key sector stakeholders, with many projects or activities already underway. The other consultations that were carried out were priorities for the preparation of the Third Climate Change Communication Report and proposals to the Green Climate Fund.

<u>Emergency Management Cook Islands</u>
On 15-19 May 2017, consultations were conducted on Penrhyn, Manihiki, Rakahanga, and Pukapuka that improved understanding of the Island Government Act 2012-13 and completed the review for the island Community Sustainable Development Plan to guide development of the island for the next 5 years and the update the islands DRM plan including consideration of the island drought management and response plan. These consultations are an important input to the island priorities outlined in the island profile (**Annex 1)** and the design on all three programme components.

Climate Change Cook Islands

On 15 March 2016, Climate Change and Disaster Risk Platform Meeting gathered community representatives, individuals and stakeholders for updates about climate and disaster management activities in the country. One update was the pilot loss & damage assessment at the community level for slow onset and sudden onset events (hazards) that cause disasters to affect agriculture, economic activities, and the environment among others. This pilot is an important input for the Geo Portal information sharing under Component 1. A key player for this pilot is the Cook Islands National Council of Women (CINCW) to ensure coverage of needs of women and the vulnerable.

Ministry of Agriculture

On 12-16 May 2017, the agriculture food security resilience workshop on sustainable environmental management for climate change adaption and mitigation and disaster risk reduction preparedness gathered Southern Group agriculture directors with a focus on building the resilience of Island populations towards food security and nutrition while taking into account climate change and disaster risk reduction strategies. The workshop agreed on seven priority outcomes for the Pa Enua that is aligned with the National Agriculture Sector Plan which guided the design of Component 3 specifically:

- Increased island food security resilience and preparedness for disasters
- Improved sustainability of island food sources
- Improved island population nutrition

Pa Enua Governance Division of the OPM

On 4-8 April 2016, water security consultations were undertaken as part of Operationalization of the Island Drought Management Plans for Atiu. The communities raised concerns on capacity of island administrations to implement the drought plan and see value in water security outlook information and alerts.

On 29-31 March 2016, water security consultations were undertaken as part of Operationalization of the Island Drought Management Plans for Mauke. The communities raised concerns on high water usage and see value in water security outlook information and alerts.

On 1-3 March 2016, water security consultations were undertaken as part of Operationalization of the Island Drought Management Plans for Mitiaro. The island has stronger water resilience due to access to emergency potable water sources – i.e. water hole situated 2 km from the village. The communities see value in water security outlook information and alerts.

On 15-19 February 2016, water security consultations were undertaken as part of Operationalization of the Island Drought Management Plans for Mangaia. The communities raised concerns on declining water supply, require know-how on the repair of community tanks and see value in water security outlook information and alerts.

I. Justification for funding focusing on the full cost of adaptation reasoning.

The Cook Islands is subject to highly destructive cyclones and intense rainfall events and devastating droughts. The Pa Enua has a high degree of exposure to climate variability and change characterized by increasing temperatures and drought frequency, increasing slightly in the northern group (and getting drier during the dry season) under the high emission scenario. The predicted effects of climate change will continue to have multiple negative effects on water security, human health, economic development and ecosystems functioning in the Pa Enua. The AF funding will increase the resilience of local communities to climate change in the Pa Enua. This will be achieved through strengthening the climate resilience of the local communities in disaster management, water and agriculture sectors through the activities to be implemented for each component noting what is currently existing and practised and is the ongoing baseline measure.

Component 1: Strengthening disaster risk governance to manage disaster risk and enhancing disaster preparedness for effective response to "Build Back Better" in recovery, rehabilitation and reconstruction

Baseline

The current information systems in various sectors including emergency management, water and agriculture exist in silos and only accessible by the agency. The base data such as population, social statistics, land etc. are replicated in each of the databases. The major issue is that these individual databases do not communicate with each other and are not standardised. This means that multiple surveys are being undertaken for the same information and replicated according to the sector requirements. This also brings into question the issue of whether the information is correct and whether the decisions that are being made as a result of the information are both relevant, appropriate and in the best interests of the communities involved. Multiple datasets means that national policies will not be integrated and therefore could be flawed because information is either misleading or itself flawed. Emergency Management Cook Islands as part of its ongoing role to support resilience and preparedness within all the Pa Enua Communities are constrained because they are unable to access existing baseline data in order to produce management tools that will trigger early warning systems for the communities. There is no coordinated approach and GIS standards in the gathering of statistical data and no central government database that is responsible for baseline data that can be shared.

While some progress in building resilience and reducing losses and damages has been achieved through the development of Island Disaster Risk Management Plans and the Cook Islands National Disaster Risk Management Plan 2017 little else has been possible. Lack of funding has been a major issue.

Additionality

AF resources will provide a functioning integrated central Government ArcGIS Portal as outlined in the introduction to Part II of this proposal that discusses the Programme Logic Figure ~~4~~5 clearly shows the value to be achieved as a result of the

central information system and what should be further developed as a result. More robust Disaster Risk Management Tools, Early Warning System Plans, Food Security Plan and Post Disaster Needs Assessment. It will then be possible to develop early warning system Triggers and Apps that the community and stakeholders will have access to, opportunities for review and further planning and feedback to the National GIS Taskforce.

The Cook Islands National Disaster Risk Management Plan 2017 requires all the Island Disaster Risk Management Plans to be updated and aligned to the National Plan.

Component 2: Integrated water security management planning and implementation for Pa Enua communities

Baseline

The northern group islands have no running streams and rely mainly on rainwater harvesting for their water supply. It is collected from the roofs of most community buildings, household houses and also from purpose-built rainwater collection roofs, known locally as “Fare Vai” or “Wale Wai”. On most of these islands potable water resources have always been used wisely and conserved to prolong supply. In the northern group islands water is reticulated as well as having household and community water tanks. There is clearly a lack of any form of management systems for the existing community tanks and associated infrastructure on any of the islands. Generally if a management system is documented adherence to them is poor. The current level of leaks and the lack of control measures or regimes in place to maintain tanks either at household or community and ensure the guttering are working indicates that more interventions are needed from the island Government administration. Without this the tanks will continue to develop leaks and remain in a state of disrepair and there will be continual degradation. There is no organisation on the islands who are taking responsibility for the management of water infrastructure and to promote water use management including monitoring of water quality and safety.

Simple Drought Plans have been developed on each island and communications with the Pa Enua Division of the Office of the Prime Minister on a monthly basis will confirm the level of water in tanks on each island. A manual calculation is then made to estimate whether water supply for the month is adequate given rainfall forecast. There is no management tool available to allow this to occur.

There is currently no national-level organisation that is responsible for or coordinates the Pa Enua water sector. Water projects have been designed with a management team to oversee the project only. There is no central agency that will ensure Pa Enua water policies are consistent with national policies, water infrastructure investments are cost effective. There is no continuity of Pa Enua water sector oversight when the project finishes.

Additionality

AF resources will provide a more integrated approach for the Pa Enua water sector. The Water Committee will be formalised to oversee not only the AF project but also Pa Enua water sector. It will take a holistic and overarching view of the

requirements and priorities for water assets and investments in the Pa Enua and ensure compliance with the national water policies.

Water investments will be further advanced through the development of a water-modelling tool to ensure that the islands that require the most support for water investments are managed appropriately. The Water Security Fund will provide the means for the Water Committee to prioritise these investments.

Water management tools and training in tank and roof maintenance will be a priority for all the communities. Island Water Security plans will be strengthened with communities having a better understanding of requirements.

Component 3: Revitalised agricultural production systems strengthening island food sources and livelihoods in the Pa Enua

Baseline

Today agriculture produce contributes less than 3.3 percent to GDP in 2015/16. Cook Islanders of working age have increasingly moved from the Pa Enua to Rarotonga and from Rarotonga to New Zealand, participation in the agricultural activities has fallen dramatically. Most of those in agriculture are part time subsistence farmers and little produce is transferred from the Pa Enua to Rarotonga to cater for the growing tourism industry.

The Pa Enua agriculture sector is fragmented and managed autonomously by the Island Governments with little technical support being provided unless requested. The Ministry of Agriculture will provide technical advice to Island Governments on request. Agriculture in schools is limited to the classroom with few practical examples of how gardens grow and what needs to happen in order to have different food choices in the diet.

There is little agricultural data collected in the Pa Enua and able to be transferred in a format that can be used by farmers. Documenting traditional knowledge as well as local crops and how they should be grown is negligible. Caring for orchards and fruit trees that are growing wild is not an option currently.

Additionality

AF resources will provide an opportunity to revitalise agriculture in the Pa Enua. Together with a memorandum of understanding (MOU) with island administrations, MoA will take a lead role in supporting all the component activities including supervising the specialist who will be contracted under this programme. The MoA will establish a monitoring system to track market crop and vegetable supply and demand for production and price changes for the Pa Enua as an extension of the successful Rarotonga AgINTEL database system.

The programme will provide the resources to create an enabling environment that will start from school, lead to young farmers improve community livelihoods and produce that could be on the restaurant tables in Rarotonga.

It will require a concerted effort to improve food security in the northern islands as well as building healthy and nutritious diets which would not be available. Nurseries

on all the islands will ensure that local trees and seedlings can be propagated and knowledge transferred to the E-agriculture information systems and distributed widely for all stakeholders in the agriculture sector.

Agriculture specialists will build on existing plant stock and fruit trees and maintenance of these will provide new economic opportunities for communities in the southern group islands.

J. Sustainability of the Programme Outcomes.

The programme design on its own is expected to be sustainable. The overall objective of an integrated approach, coordinated institutional arrangements and managing information flows to reduce duplication of effort positions the programme for continued implementation and sustainability. The lead organisations and national agencies are sustainable now and are key agencies in the Cook Islands Government. The programme is supporting these same key agencies with information systems, development of vital management tools for early warning systems, water management and food security which will ensure not only the sustainability of the central information system on Rarotonga but the extension of these services to the Pa Enua that will enable evidence-based planning and guarantee improved water security, resilient communities and more robust albeit small economies – sustainable Pa Enua.

The Government is already committed to ensuring the sustainability of the Pa Enua. Annually, Government commits in the Budget appropriations minimum levels of cash funding to each of the Island Governments. AF resourcing has not only complemented the appropriation for the next three years but it will also strengthen the resilience of each of the islands in a number of ways to further ensure sustainability with the possibility of improving the economic contributions that some of these islands are able to achieve. The INDC document reaffirms the Cook Islands position that it can deliver 100 per cent of its adaptation measures provided tools and technologies including strengthening capacities in all its inhabited islands are conditional on external support

The programme integrates and has as a major activity of knowledge management as a core part of the sustainability and replicability strategy of the initiatives, through systematically documenting and disseminating good practices, linking with school and community programmes in order to secure broad dissemination of project results and the transmission of traditional knowledge, know-how and experience to next generations of island farmers, young entrepreneurs, island Government and national government planners and policy makers. The strengthening of Island Development Plans will address the issue of climate change resilience and demonstrate the communities' understanding of what this means.

Although sector and technical specialists are a key feature of each component, to ensure effective coordination of the programme with related initiatives, existing coordination and institutional mechanisms will be harnessed at the national level, such as the Ministry of Finance and Economic Management, Office of the Prime Minister and Climate Change Cook Islands, Emergency Management Cook Islands, Infrastructure Cook Islands, the National Environment Service, the Ministry of

Agriculture and Health. NGO's such as Red Cross, Te Ipukarea Society and National Council of Women will also participate in the programme.

Another key feature of the programme design has been to build upon, either existing institutional processes, or structures and frameworks and further strengthen them throughout the programme for the long-term maintenance of its results. Key features include:

- National GIS Taskforce that will support the central ArcGIS Portal
- Water Committee that will have a further responsibility to oversee the Pa Enua Water Sector
- Agriculture Economic Resilience Fund that builds on the successful FAO funding model with the Cook Islands Chamber of Commerce.
- Location of the PMU in the Office of the Prime Minister that also has the divisions that already work in the Pa Enua including the Pa Enua Division that oversees Governance in the Pa Enua. It also has the Policy Unit, which is also the Secretariat of the JNAP, NSDC and NSDP.
- Location of technical specialists with the sector agencies such as the Ministry of Agriculture and Infrastructure Cook islands. This will also allow close coordination with related initiatives. This will also provide for the opportunity for these agencies to consider absorbing the functional roles within the Ministry once programme funding has been expended.

Other design features of the programme that will ensure sustainability are the Water Security Fund in Component 2 and the Economic Resilience Fund in Component 3. The Water Security Fund will allow for community-level infrastructure investments, such as water harvesting structures that will undergo strict environmental appraisal using best environment practice, local environmental screening process that take into account AF principles, a financial feasibility assessment during the prioritization process to ensure sustainability and maximize the cost- benefits of particular interventions for particular communities as well as ensuring increased water security and resilience is achieved. The Economic Resilience Fund will channel support to communities or individuals with a focus on assisting community economic groups (e.g. farmers who wish to have water drainage systems, fruit pulping or jam-making that will add value to agriculture produce that might otherwise be wasted). Like the Water Security Fund, strict environmental appraisal using best environment practice, local environmental screening process that take into account AF principles will apply to any activity that will significantly and adversely impact on the environment. With a robust selection process, ERF projects could attract bank co-financing leveraging the value of the ERF. This would mean that the groups or individuals would continue to operate beyond the period of programme grant.

The capacity building activities, networking and field-level presence will help achieve environmental and social sustainability of the programme. Throughout the programme there will be a strong focus on ensuring environment and social safeguard principles are followed and where environmental and social safeguard issues arise, appropriate management plans will be prepared to mitigate those issues. The build-up of trust through dialogues and stakeholder consultations and stakeholder mobilization done through capacity building will help to achieve

sustainability. A strong focus on building local knowledge, capacities and incentives – as well as strong programme focus on ensuring gender equity in all operational matters are expected to lead to social sustainability. It will be important during consultations to identify community-based champions for water quality/safety – community organisations that are women-led which will ensure social sustainability which on some islands might include the church leaders as going to church is a major social activity on the Pa Enua.

The three components are linked by a common theme of building information management tools and systems to sustain livelihoods, improve food security and safeguard natural resources. Components 1 and 2 involve adaptation activities directed at environment, sector and livelihoods assets, Component 3 directly addresses the human dimension increasing knowledge and changing attitudes to foster ownership and sustainability. It also focuses on strengthening the local planning base through increasing technical knowledge and providing data to inform actions. Thus, the three components recognize the interplay between humans and the environment. Best environmental practice for land clearing, land use management and soil management techniques will ultimately reduce erosion of soil and therefore decrease the turbidity in the marine environment. A better quality of coastal water will improve the marine habitat which in turn will contribute to increased fish stocks. All these loop back to improved livelihood and well-being for residents in the Pa Enua.

K. Overview of the Environmental, and Social Impacts and Risks.

As part of the programme design, a preliminary risk assessment was developed against AF principles to assess environmental and social impact risks. **Table 7** provides the risk analysis matrix used to categorise the level of impact risk the programme will have on the AF principles. This categorisation was established by the Cook Islands Government under the TTV ESS policy and guidelines approved as part of the tools for the accreditation process of MFEM as an NIE under the Adapatation Fund. **Table 8** provides an overview of the assessment against AF principles and the principles that require further assessment and management are discussed in more detail in Part III C.

~~Using the AF Principles as a guideline, risks assessments and management of those risks are provided in the tables below. Overall, the programme will meet all environmental requirements and the need for comprehensive impact assessment is not required. There is potential to cause adverse site-specific impacts which are easily mitigated with the implementation of impact management plans.~~

Table 7: Risk analysis matrix to categorise the level of impacts of the programme on AF Principles

Categories	Description	Assessment

A	The programme has the potential to cause significant adverse impacts considered irreversible or unprecedented, and which extend beyond the physical footprint of the Activity.	Comprehensive Impact Assessment covering the full range of Environment and/or Social Impacts, and Impact Management Plan.
B	The programme has the potential to cause adverse site-specific impacts which are potentially reversible or more easily mitigated than for category 'A'. As part of the design phase an Impact Assessment is to be conducted covering adverse impacts only, along with an Impact Management Plan demonstrating how these will be addressed.	Impact Assessment and Impact Management Plan covering adverse impacts only. ESD Form is completed and relevant follow up of permits.
C	Minimal or no adverse impacts.	~~ESD Form completed and relevant follows up (e.g.~~

The programme has a Category B risk rating as assessed using ESS Adaptation Fund criteria which is consistent with the Cook Islands TTV ESS Policy – the programme could have minor environmental, social or gender impacts. The Category B is justified given that most of the risks as identified in the Part III C and ESMP are able to be mitigated and there would appear to be little or no need for a comprehensive impact assessment as required in Category A.

A more detailed ESS Policy screening and assessment as it applies to the AF programme will ensure that all component activities meets the standards of each AF principle; the principle applies to the programme and risk mitigation and output actions need to be taken in order to comply with the principle. These actions ~~will be~~are documented in ~~an~~the Summary Environmental and Social Management Plan (ESMP) ~~during the Inception Phase.~~

~~Based~~provided as **Annex 5**. The ESMP is focused on ~~the assessment, this project is classified as a category C.~~

~~The NIE~~process-oriented risk management where mechanisms are built into programme implementation to ensure that rigorous risk assessment and management measures will ~~engage an ESS Specialist to appraise the programme document and proposed work plans and activities for each component~~ be applied to all component activities including ~~the preparation of an ESMP. Further advice regarding each of the following safeguards during appraisal will be sought from the following agencies: NES, Ministry of Internal Affairs, MoA, ICI, Ministry of Health (MoH) and the Ministry of Culture~~unidentified sub-projects at each stage as activities are defined, approved and implemented.

This programme also includes unidentified sub-projects (USPs) in Component 2 (Output 3 Allocation of Water Security Fund) and Component 3 (Output 5 Allocation of the Economic Resilience Fund. With USPs, the proposed interventions and investments are not defined at the programme approval stage. For Component 2, this includes water security mapping modelling to enable prioritisation and subsequent designing and costing of new as well as repairs and maintenance of

water infrastructure are required prior to implementation. In the case of Component 3, the Economic Resilience Fund will be defined at the time that applicants submit their applications and if they meet the criteria as established by the Economic Resilience Committee. In both cases there will continue to be community consultations during assessment and prior to contracts or proposals being awarded.

It is recognized that there is a need to develop local capacity to empower community members and stakeholders who are anticipated to be recipients of the Economic Resilience Fund and grant recipient and contracts under Component 3. The ESMP has been designed to facilitate consultations and education and awareness programme in the southern group islands to support and facilitate the application process as well as the following activities prior to project implementation. An Environmental Significance Declaration Permit (ESD) checklist (**Annex 6**) will be used for screening across all three of the programme's components at preparation to confirm final design, during implementation and post implementation. This will be supported by the ESS and Gender specialists with oversight by the M&E specialist.

Table 8: Identification of environmental and social impacts and risks

Environmental and social principles	No further assessment required for compliance	Potential impacts and risk categories – further assessment and management required for compliance
Compliance with the law		✔
Marginalized and vulnerable Groups		✔
Access And Equity	~~✔~~	✔
Core Labour Rights	✔	~~✔~~
Gender Equality and women empowerment		✔
Human Rights	✔	~~✔~~
Indigenous Peoples	✔	
Involuntary Resettlement		✔
Protection of Natural Habitats		✔
Conservation of Biological Diversity		✔
Climate Change	~~✔~~	✔
Pollution Prevention and Resource Efficiency	✔	
Public Health	✔	
Physical and Cultural Heritage	✔	
Lands and Soil Conservation		✔

PART III: IMPLEMENTATION ARRANGEMENTS

A. Arrangements for Programme Implementation.

National Implementing Entity

The Ministry of Finance and Economic Management (MFEM) is the National Implementing Entity (NIE). MFEM was accredited as an NIE to the Adaptation Fund on 14 July 2016. The Ministry is responsible for effective economic, fiscal, and financial management by Government. It provides the accompanying accountability arrangements, together with compliance with those requirements. MFEM is also responsible for Revenue Management, Development Coordination, Treasury and the Cook Islands Statistics Office.

The Programme will be implemented through MFEM's TTV which is a streamlined approach as to how "activities", projects are planned, implemented and monitored across Government and its development partners. The NIE has been confirmed as having the technical and administrative responsibility for applying AF inputs in order to reach the expected Outcomes as defined in the Programme Logic Framework. The NIE will be responsible for the timely delivery of programme inputs and outputs, and in this context, for the coordination of all other responsible parties, including other line ministries, and local island government councils.

During the Inception Phase of the programme, the NIE will be responsible for establishing the National Implementing Entity Unit (NIEU) that will have overall management of the programme including reporting direct to the Adaptation Fund. All NIEU positions will be advertised and follow the Government of the Cook Islands approved Purchase and Sale of Goods and Services (PSGS) Policy 2016 and Procurement Policy. The main NIEU positions will include:

- National Project Manager (NPM)
- Financial Accountant
- M&E Specialist
- Financial Audits will be contracted as required as well as annual audits for the project.

Executing Agency

The Executing Agency will comprise the Project Management Unit (PMU), that will be established in the CCCI Division of the OPM. The PMU will oversee the project execution, supporting the individual agencies that will be executing each component. The PMU will include the

- Project Coordinator,
- Financial Supervisor,
- Administrative clerk.

The PMU contracts will be for the duration of the project (3 years) with the Project Coordinator, Financial Supervisor and Administration Clerk being contracted for (30 person months each).

Further to the above contracts, there will be three further contracts that will be confirmed which will include the

- Gender Specialist,
- Environment and Social Safeguards Specialist and
- Communications, Media and Awareness Specialist.

To ensure that the personnel required for the implementation for the AF proposal are clearly defined and there are no overlaps, **Table 9** below outlines the proposed personnel contracts and describes the major duties and responsibilities of each of the proposed contracts that will be carried out by personnel in the NIEU in MFEM and Executing Entity and the Project Management Unit in the CCCI in the OPM. It is important that these are understood at this stage to ensure that there is no duplication of effort and there is clear delineation of responsibilities and accountabilities to ensure successful implementation of the AF programme.

Table 9: Personnel Contracts for NIEU and PMU

Personnel Contracts	Responsibility
National Implementing Entity Unit, MFEM	
National Project Manager (30 person months)	NPM will be the lead manager and have oversight of the entire AF Programme on behalf of the NIE. Responsible for ensuring all inputs and outputs are completed on time. Ensure that the project produces the results specified in the project document to the required standard of quality and within the specified constraints of time and cost NPM reports to the NIE. All specialists report to the NPM Support monthly meetings with the PMU and Meetings with the Project Advisory Committee
Financial Accountant (20 person months)	Overall operational and financial management and contractual arrangements of the programme with AF on behalf of the NIE Quarterly financial reporting of project activities that will include budget versus actual with particular emphasis on meeting work plan targets and timelines for implementation highlighting early any delays that will put at risk future financial milestones. Establish procurement and financial manual Approve annual budget Release fund replenishments on valid reporting Monthly Meetings with the Financial Supervisor in the PMU
M&E Specialist (6 person months)	Review with the ESS and Gender Specialists the results Framework during Inception Phase to ensure that indicators are disaggregated and will achieve the desired outcomes as designed. Reporting on programme objective, outputs and strategic results framework annually and the terminal report Develop a tracking tool to ensure the monitoring and evaluation of the programme at island level and project level are achieved Prepare templates for monitoring and reporting in line with the

	TTV.. Develop and coordinate monitoring, evaluation and learning systems to systematically and consistently monitor results and impacts across the projects. Coordinate monitoring, evaluation and learning for: (a) supporting the NIE Unit and PMU during the planning and reporting period; and (b) synthesizing data and conducting analyses of its quality, including feedback to data providers when required. Advise and support the NIE Unit and PMU in all matters relating to results management, monitoring and evaluation, reporting, learning, knowledge sharing and feedback systems, and establish processes and maintain systems Support the coordination of monitoring, evaluation and learning during planning and reporting, and ensure that country and project work plans align with the results frameworks for the programme and its national and regional project elements. Design and facilitate the implementation of studies, assessments and learning in coordination and cooperation with technical coordinators and programme staff across sectors.
Auditor (as needed)	Spot financial audits Annual financial audits
Project Management Unit, CCCI in the OPM	
Project coordinator (30 person months)	Support and coordinate the work of the agencies in the implementation of component activities. Supervise and ensure timely completion of project activities and report and be responsible to the NPM on a monthly basis Oversight of financial and administration of project activities on behalf of the agencies with the Financial Supervisor Supporting the annual work programmes of each agency Quarterly Reporting of project activities to the NPM 12 Meetings of Project Advisory Committee 6 Meetings of the National Climate Change Platform semi-annually (1 every six months) Support the three (3) National workshops for each of the agencies executing each component to be held in Year 1 Ensure completion of the annual technical reporting from each of the short-term specialists.
Financial supervisor (30 person months)	Report directly to the Financial Accountant regarding all financial issues Review vouchers in financial process Enter all vouchers in the financial system Check all payments against budget Monthly financial reporting
Administration clerk (30 person months)	Provide administrative support to the PMU Prepare vouchers in financial process

Table 10 outlines the remaining three specialist contracts that will be cross cutting across the programme. These positions demonstrate the linkages between each of the components and overlapping nature of the work of each specialist in the implementation of the programme. During the Inception Phase the specialists will

work together to develop a work programme and confirm the programme indicators and targets. Each specialist will be accountable to the NPM and all reporting will be directly to the NPM.

Table 10: Specialist Contracts

Personnel Contract	Responsibilities
Gender specialist (4 person months)	Report directly to the NPM Initial Gender Action Plan that will be monitored and annual reporting against the action plans Appraise the programme document and proposed work plans and activities for each component to ensure compliance with the AF Gender Policy Input into the project terminal report
Environmental and social safeguard specialist (4 person months)	Report directly to the NPM Initial action plans that will be monitored and annual reporting against the action plans Ensure compliance to the environmental and social policy of the AF and the CIG TTV . Appraise the programme document and proposed work plans and activities for each component including the preparation of an ESMP Prepare a pollution prevention and management plan Prepare a knowledge management strategy and ensures the benefits of the programme are achieved for the most vulnerable in the Pa Enua Input into the project terminal report
Communications, Media Awareness Specialist (9 person months)	Report directly to the NPM Design a communications strategy based on the overall objectives and programme strategic results framework The Strategy will assist the NPM and Project Coordinator to communicate effectively and meet core organisational objectives. Collaborate with M&E Specialist to design a knowledge management strategy based on the overall objectives and strategic results framework and that harmonises and creates synergies among knowledge products and lessons

During the Inception Phase of the project the NIE will be responsible with CCCI to advertise and contract all the above positions that will follow the Cook Islands approved PSGS Policy 2016 and Procurement Policy.

The programme has been designed to ensure that each project component will also contract technical specialists (**Table 11**) who will be responsible for driving the respective component activities identified in the proposal. Each of the lead agencies or Ministries that will be responsible for each component will contract an appropriate specialist to support the implementation of the AF Programme as outlined in 1below.

The terms of reference for each Specialist Contracts will be confirmed during Inception Phase with the NPM and final engagements will be agreed by the NPM. Work programmes will also be agreed with the NPM and the Project Coordinator.

Important for this project will be to ensure that communications with Pa Enua and project management will be carried out effectively and efficiently during the execution of this project. The distance from Rarotonga is a challenge for all agencies therefore

telephone and skype calls to keep in touch with Pa Enua project activities will be essential. Therefore a lump sum will be provided for project management and communication costs within each component. This will not only support the work of the project management unit but also ensure the agency is supported in project execution.

Table 11: Technical Specialist Contracts

Programme Components	Agency/Ministry	Specialist Contract
1. Strengthening disaster risk governance to manage disaster risk and enhancing disaster preparedness for effective response to "Build Back Better" in recovery, rehabilitation and reconstruction	EMCI	Emergency Management and GIS Specialist
2. Integrated water security management planning and implementation	Water Committee and Pa Enua Governance Unit of the OPM	Water Security Engineer
3. Revitalised agricultural production systems strengthening island food sources and livelihoods in the Pa Enua	Ministry of Agriculture	Agricultural Extension Specialist Fruit Horticulturalist

A Programme Advisory Committee (PAC), a high-level cross-sectorial committee comprising of lead policy makers and heads of departments and responsible to approve key management decisions of the project and will play a critical role in assuring the technical quality, financial transparency and overall development impact of the project, will be established as soon as this project is approved. The PAC will be composed of designated senior-level representatives of the OPM, representatives of key Ministries and agencies (such as MoA, EMCI, MoE, Meteorological Services), and Island Council representatives of the Pa Enua. A complete list of PAC members and their designated alternates will be provided in the inception report including criteria for selecting Island Council representation.

The Chair of the Project Advisory Committee will be Director of CCCI and/or an alternate to be decided during project inception. **Table 12** illustrates the institutional arrangements for project execution.

Table 12: Institutional arrangements for Project Execution

Name	Purpose and composition	Meeting frequency
National Implementing Entity Unit (NIEU)	The NIEU consists primarily of the NPM, Financial Accountant as well as the Monitoring and Evaluation Specialist.	Minimum monthly project update meetings with NIE
Project Management Unit (PMU)	The PMU includes the Project Coordinator, financial supervisor, administration clerk as well as with short term specialists providing regular input into gender, environmental and social and social safeguard and communications as required to fulfil contract outputs.	The PMU administration will meeting monthly and be included with NIEU monthly meetings with the

		NIE.
Project Advisory Committee (PAC)	The PAC acts as an advisory body to the project providing budget accountability, project guidance, policy input and support. The PAC ensures project alignment to national priorities.	The PAC meets quarterly and approves budgets and inputs
Technical Advisory Committees (TAC)	Each component has a specialist contracted and the TAC is the source of technical expertise and support for the PMU. The TAC provides technical guidance to the project components, shares institutional knowledge, and assists with developing TORs and other project needs. The TAC may include Ministry stakeholder support which may include technical oversight of this project's interventions, including site visits and other validation of activities as required. The TAC's include: Component 1 – GIS Taskforce Component 2 – Water Security Committee Component 3 – Economic Resilience Committee	The TAC will meet monthly for the first year, and with a plan to meet on a quarterly basis with additional meetings as needed.

Figure 7: Programme structure: Implementing and executing levels

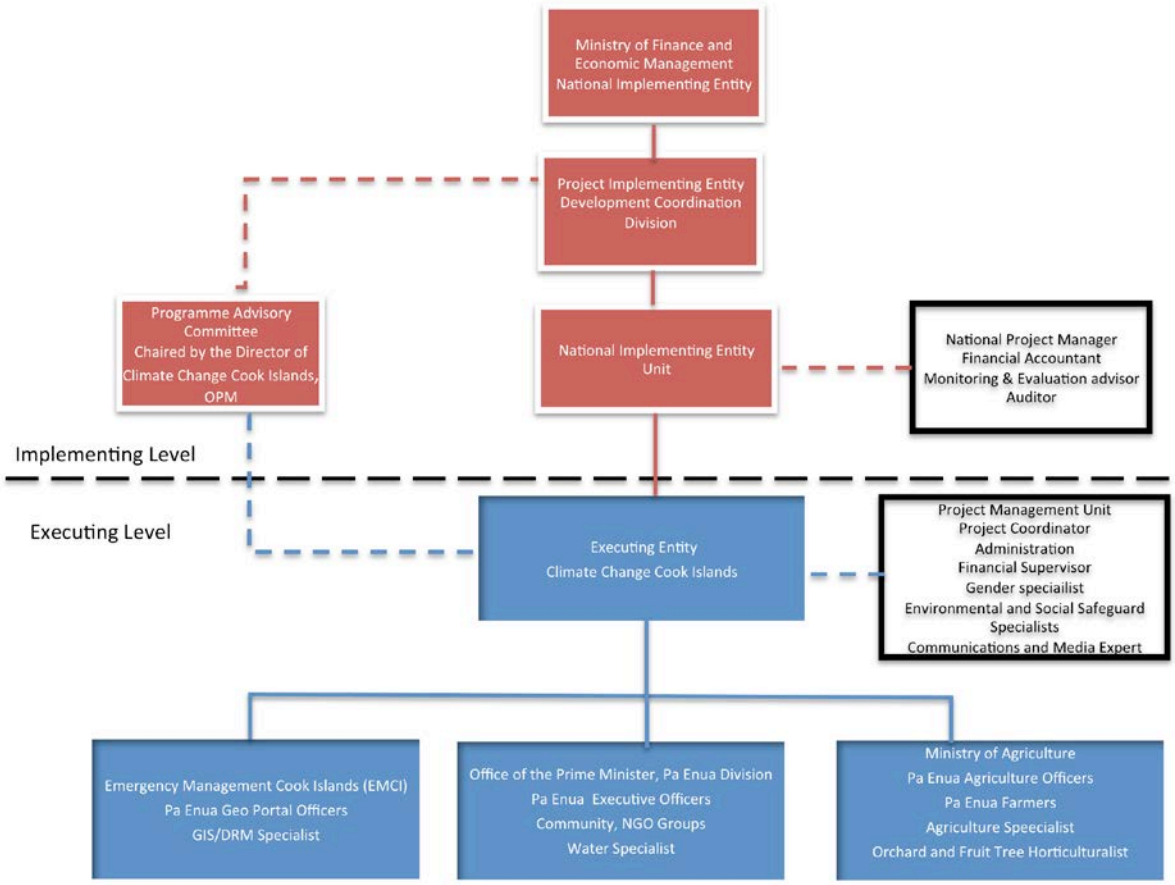


Figure ~~6~~7 gives a diagrammatic view of the institutional arrangements and the relationship between the NIEU and the PMU.

To deliver specific Outputs as outlined in the strategic results framework, the NIE can delegate such responsibilities to external partners through direct contracting. NIE will bear responsibility for the delivery of those Outputs and put in place adequate measures to oversee such work. The corresponding Letters of Agreement (LoA) will be annexed to the project document that will be signed between by the NIE after the AF project document has been endorsed.

A key feature of the institutional arrangements is that committees will be multi-stakeholder, involving community and private sector interests. The Terms of Reference (TOR) of the committees promotes transparency and accountability in implementation and will be developed and confirmed during Project Inception. Each of the Committee members will be required to sign a Cook Islands Confidentiality Agreement and Conflict of Interest Declaration.

B. Measures for Financial and Programme Risk Management.

Project assurance: Since 2015 TTV has been streamlined and embedded in the DCD, of the MFEM. This approach is how Government plans, implements and monitors projects (labelled "activities") across government including aligning the AF NIE requirements to better enable the MFEM application for accreditation towards becoming the NIE.

TTV is designed to streamline and overcome a haphazard approach, in a way that is culturally based and fosters learning the craft especially at the local level. TTV has three phases as shown in the image to the right; the Government has talked extensively with Cook Islands elders and leaders about terms and methods that have served us well through this process in the past.

DCD will support the NIE with project implementation by assisting in the monitoring of project budgets and expenditures, contracting project personnel and specialist consultancy services, and subcontracting and procuring equipment at the request of the NIE. On the technical side, the NIE will monitor progress of project implementation and achievement of project outcomes/outputs as per the endorsed project document as well as monthly meetings with NIEU and PMU.

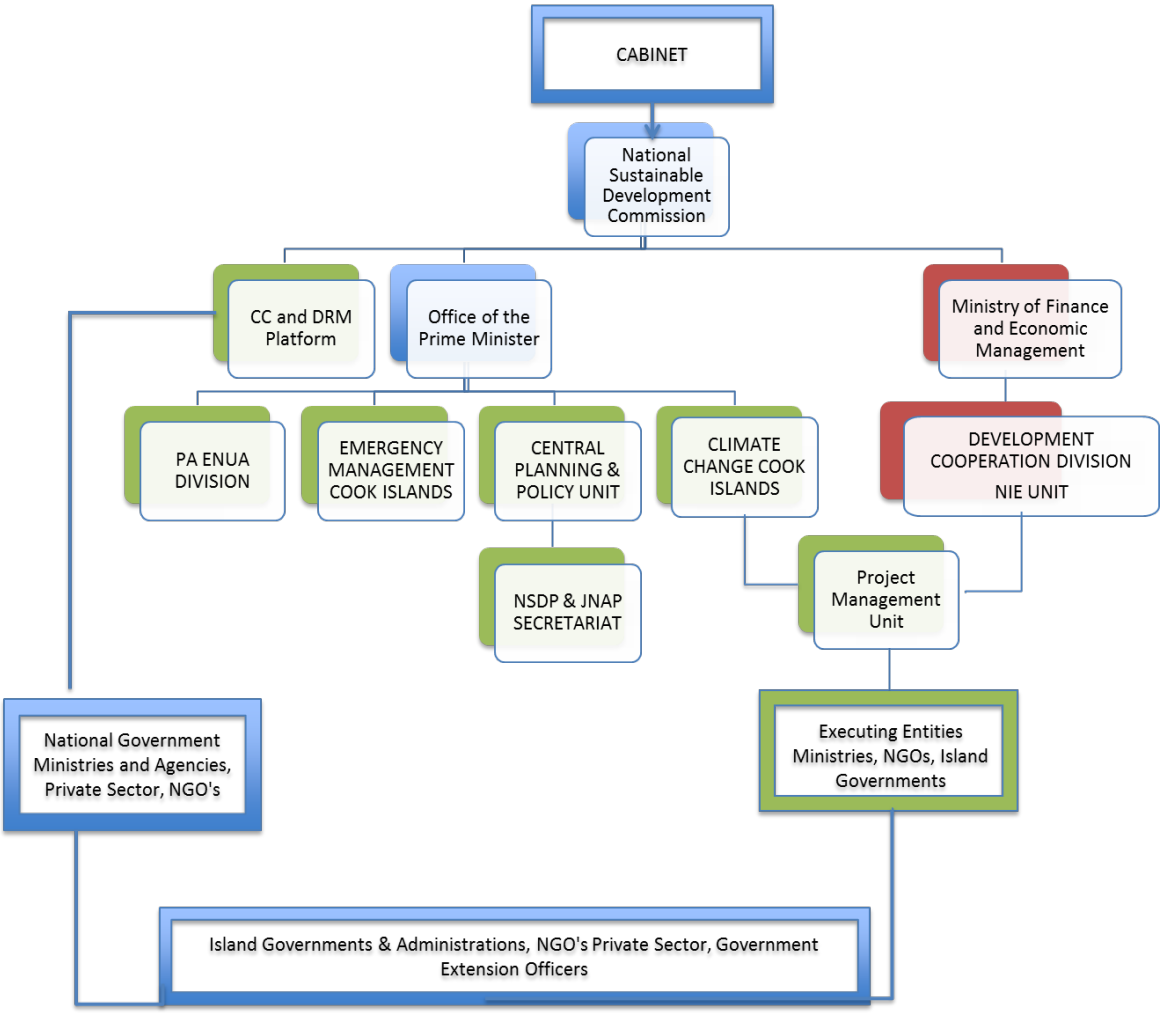
Programme implementation will be fully aligned with national institutional structures as illustrated in Figure ~~6~~8. The Ministers of the Crown make up the Cabinet and is the premier decision making body in the Cook Islands. The main role of the NSDC is to provide sound strategic advice to Cabinet on the proper allocation of all developmental aid to all sectors of the economy and to ensure that such allocation is aligned to the successful implementation of the National Sustainable Development Plan 2016 – 2020. Furthermore, this entity is to ensure that the fulfilment of the Budget Policy Statement and the Mid-term Budgeting framework is successfully implemented and accomplished.

The membership of the NSDC includes OPM Chief of Staff and Heads of Ministries of: ·

- OPM, Central Planning and Policy Unit (NSDP and policy advice)
- Crown Law (legal implications)
- MFEM/DCD (resource advice)
- Foreign Affairs (aid and foreign relations advice)
- Public Service Commission (public service implications)
- Human Resource Development (capacity and upskilling implications)
- Chaired by COS – OPM

The Secretariat is the Central Planning and Policy Division of the OPM. The NSDC has endorsed the project. This institutional structure demonstrates the strong commitment from the Government exists, with well-functioning national coordination mechanisms, which limits the risks faced by the proposed programme. The Central Planning and Policy Division is also Secretariat for the JNAP II that provides the framework and guidance to the Government and all community actions to strengthen resilience and better respond to the Cook Island 2020 vision of the Te Kaveinga Nui and Goal 13 of the National Sustainable Development Plan 2016 -2020 and both policy documents underpins the rationale for this project.

Figure 8: National Institutional Arrangements for Programme Implementation



The structure also demonstrates the relationship between MFEM as the NIE with the key agencies within the Office of the Prime Minister that will play a key role in the execution of this project.

The Climate Change and Disaster Risk Management Platform is a key semi-annual meeting of stakeholders including private sector and NGO's providing an opportunity for wider community engagement that will provide an opportunity to discuss adaptation and climate change issues to feed into decisions by Cabinet.

Key financial and institutional risks to successful implementation of the programme are presented in **Table 13** with identified risk mitigation measures

It will be important during the implementation of this project to ensure that all activities are planned and clearly articulated and the risks having been identified are discussed with stakeholders and has local acceptance which will minimize all risks. The most serious risks are related to limited qualified staff and high staff turnover, which are common issues in Pacific island countries. The mitigation strategy to address this risk involves early and consistent engagement of senior government decision makers on programme progress and monitoring, the application of an awareness programme for policy makers, and the involvement of a group of core

technical officers in relevant line departments, as well as Island Councils and Traditional Leaders. Early intervention on each island with Executive Officers in the Pa Enua and community stakeholders will be essential to ensure successful implementation of the project. During regular programme review meetings, the NIE will be an active participant, all risks and mitigation measures will be reviewed in line with monitoring programme.

Table 13: Key financial and Institutional Risks and Mitigation Measures

Checklist of Financial and Institutional Risks	Level of Risk	Potential impacts and risks – further assessment and management required for compliance
FINANCIAL RISKS		
Meeting the expectations of the Communities to implement projects but there is insufficient budget	M	Project Inception workshop will provide clear feedback and project implementation plans that will address each island.
Finance personnel is unable to meet financial commitments and targets as defined in the workplan	M	Regular monitoring for financial transactions with monthly bank reconciliation statements completed.
Travel costs exceed the budget to meet Northern Group commitments and activities	M	Early intervention and continuous consultation with Northern Group partners to ensure they are kept informed of progress of project activities with early interventions if expenditure exceeds budget.
Economic Resilient and Water Security Fund requests exceed available budget	M	During Project Inception criteria is clearly understood for fund requests to be assessed and decisions provided as soon as they are made.
Disputes during contract execution, e.g. the quality of the work is assessed to be inadequate, or regarding issues related to budget and completion time of work	M	If the Project Manager and or Coordinator cannot resolve the conflict, the matter must be addressed by the NIE; TTV has a mediation process that will be implemented.
The project may not receive the funds on time, or there may be a slow disbursement of funds, which can have a significant impact on implementation and co-financing availability.	M	Request a large upfront disbursement from the Adaptation Fund (40%) to ensure that the project has a good start and reporting is completed early for subsequent payments. NIE tries to ensure that there is at least a 5% contingency fund within its core government budget for such situations
Misappropriation of Project Funds	**L**	Annual audits as well as spot check audits will be enforced during project implementation.
INSTITUTIONAL RISKS		
Not able to contract suitable Project Management team for the PMU	M	Advertise more widely and consider overseas Cook Islanders who wish to return home.
Poor collaboration between programme partners	M	Inception workshop to clarify roles and responsibilities and establish and implement programme stakeholder collaboration and team

		building approaches
Island Government disputes the role of the PMU in Rarotonga and declines implementation of activities	L	Early consultation during Project Inception Phase with Executive Officers and Mayors on each island and also through Island Council of Pa Enua Representatives in the PAC will ensure that Island Governments are aware of the project and the likely activities that will be carried out
Disputes over who should drive the projects on island and the competing interests of various stakeholders	L	Programme technical team members will inform and encourage communities through the Island Council, and devise community lead solutions through participatory consultations to secure commitment and minimize disputes. Programme activities will be delivered with the active engagement of local institutional mechanisms (Island Councils, Climate Change Community Teams, local associations, Water Committees, etc.) as well as NGOs present on the islands to prevent and resolve any land-disputes.
Limited human resources in Government ministries and agencies to contribute to the activities.	M	Secure participation of key Ministries and Agencies during programme inception phase and use positions to be recruited in the project to provide technical backstopping. Project monitoring process to identify any problems at an early stage and NPC to arrange for alternative measures including use of NGOs and community members.
The government is no longer supportive, politically and financially, of a cross-sectoral and integrated approach to the management of climate risks and opportunities.	L	Reinforce mutual obligations for project implementation at programme outset and during annual and mid-term reviews
Communication, access and community coordination difficulties delay timely implementation of the planned programme activities at the target community level. Communication costs exceed budget allocation.	L	Active engagement of Island Council and community groups of each island to support communication and coordination with communities on island specific conditions. This shall involve the development of multi-level communication strategy and outreach programme for each Pa Enua.

C. Measures for Environmental and Social Risk Management.

Risks associated with the environment and communities ~~during project implementation will be addressed with the use of established Cook Islands Government TTV, ESS policy and guidelines, where the ESS specialist will provide initial action plans at the design phase and from time to time review those plans as the project proceeds.~~ are detailed in **Table 14** below and follow on from Part II Table 8 that was the initial environmental and social impacts and risks assessment. The risks identified are consistent with those identified in the ESMP (Annex 5) and will be further screened prior to final design and implementation using the ESD checklist

(Annex 6). USP's will undergo the same screening prior to confirmation in Component 2, Water Committee and Component 3 Economic Resilience Committee.

The initial actions will involve coordination of the roles and responsibilities of others involved in managing those risks with the ESS specialist taking the lead role with supporting role from the Gender and M&E Specialists.

~~Using the AF Principles as a guideline, risks assessments and management of those risks are provided in **Table 14** below.~~

Table 14: Environmental and Social Risk Assessment and Management

Environmental and social principles	Assessment	Potential impacts and risks – further assessment and management required for compliance	
		Description of process for environmental and social and gender safeguarding	Responsible executing agent/roles and responsibilities
Compliance with the law	~~Principle applies to the specific component activity but mitigation actions need to be taken in order to comply with the expected outcome of the principle.~~Low – Medium	There is the risk that approved outputs will unintentionally breach local laws, it is therefore important to identify and consult on laws and policies that may affect the outputs at the design stage. Follow the ESMP as well as AF principles and gender policies, which will apply equally to all USP's.	NIEU, Specialists engaged, ESS and Gender Specialists
Marginalized and vulnerable Groups	~~Principle applies to the specific component activities but mitigation actions need to be taken in order to comply with the expected outcome of the Principle.~~Medium	The population of the Pa Enua communities are predominantly elderly, persons that are economically inactive, and young children. Because Pa Enua communities are small and close, there is people know each other enough to know those who lack the resources to provide for themselves both	NIEU, Specialists engaged, ESS and Gender Specialists, and those agencies who are responsible for affected persons, e.g. Ministry of Internal Affairs and Gender Development, Health, NGOs like Te Vaerua, Te Kainga, The Creative Centre, and the Cook

Environmental and social principles	Assessment	Potential impacts and risks – further assessment and management required for compliance	
		Description of process for environmental and social and gender safeguarding	Responsible executing agent/roles and responsibilities
		mentally and physically. It is therefore important that thorough analysis of the population is undertaken and the needs of those people identified and addressed during this programme.	Islands National Council of Women must be consulted (support Gender Development Policy)
Access And Equity	~~Principle applies to the programme but mitigation actions need to be taken in order to comply with the expected outcome of the Principle.~~Medium risk	As mentioned above, each Pa Enua community is small and close. The culture of sharing and making sure every individual is taken care of by either the family or the community is still strong. However, there is the risk that the activity designed may unintentional result in some individuals or households not have access to basic health services, clean water and sanitation, energy, education, housing, safe and decent working conditions, land and fishing rights. It is therefore important that this principle is taken into consideration during the initial planning stages of the	NIEU, Specialists engaged, ESS and Gender Specialists, Traditional Leaders and Island Councils of each Pa Enua.

Environmental and social principles	Assessment	Potential impacts and risks – further assessment and management required for compliance	
		Description of process for environmental and social and gender safeguarding	Responsible executing agent/roles and responsibilities
		programme.	
Core Labour Rights	~~Principle applies to the specific project/programme but mitigation actions need to be taken in order to comply with the expected outcome of the Principle~~Low	All persons employed under this programme will go through contractual arrangement following the CIG Procurement Policy. For agricultural projects that are considered under the Economic Resilience Fund in Component 3, it is important, where a project requires assistance to pay workers that proponents ensure the rights of workers are observed and they are paid according to current income laws and their working conditions in accordance to good employer practice.	NIEU, Specialists engaged (for Agriculture and Water components), ESS and Gender Specialists, farmers, businesses involved with farmers, the Economic and Water Security Fund Committees.
Gender Equality and women empowerment	~~Principle applies to the specific project/programme but mitigation actions need to be taken in order to comply with the expected outcome of the Principle.~~Medium	It is important that traditional roles of women are supported and opportunities available are available to both men and women. One of the disadvantages of small and close communities in the Pa Enua is the influence of the Church and how it strongly, and always advocate 'the role of women is in the	NIEU, Specialists engaged (for Agriculture and Water components), ESS and Gender Specialists, farmers, Economic and Water Security Fund Committees and the GIS Taskforce, and relevant NGOs such as the Cook Islands National Council of Women

Environmental and social principles	Assessment	Potential impacts and risks – further assessment and management required for compliance	
		Description of process for environmental and social and gender safeguarding	Responsible executing agent/roles and responsibilities
		kitchen...' This attitude worsens the situation for women in the Pa Enua, and this is a risk that leads to discrimination against women and their ability to do other works. It is therefore vital that the opportunity to discourage this risk available in the design phase of activities in all three components so that a way for both men and women to 1) have equal opportunities to participate in consultation, training and awareness activities; 2) receive comparable social and economic benefits; and 3) do not suffer disproportionate adverse effects during the development process.	must be consulted.
Human Rights	~~Principle applies to the specific project/programme but mitigation actions need to be taken in order to comply with the expected outcome of the Principle.~~Low	This is a cross-cutting principle and all activities will be design to make sure the rights of every person in the Pa Enua are not infringed upon.	NIEU, Specialists engaged (for Agriculture and Water components), ESS and Gender Specialists, farmers, Economic and Water Security

Environmental and social principles	Assessment	Potential impacts and risks – further assessment and management required for compliance	
		Description of process for environmental and social and gender safeguarding	Responsible executing agent/roles and responsibilities
			Fund Committees, GIS Taskforce, Island Councils and Traditional Leaders
Indigenous Peoples	~~The project/programme meets the standards of the Principle~~Low	The Cook Islands do not use the term 'indigenous Peoples'. In addressing issues discussed as applicable to this principle we refer to the Cook Islands as having various 'ethnic groups' e.g. Asians, Europeans, Other Pacific Islands. The law of the country applies to everyone in the country whether they are residents or visitors.	NIEU, Specialists engaged (for Agriculture and Water components), ESS and Gender Specialists, farmers, Economic and Water Security Fund Committees, GIS Taskforce, Island Councils and Traditional Leaders
~~Voluntary~~Involuntary Resettlement	~~Principle applies to the specific project/programme but mitigation actions need to be taken in order to comply with the expected outcome of the Principle.~~Medium	Where community Fale-Vai or Are-Vai is proposed, or a new road is proposed, to serve the community, the rights of landowners or those who are using those lands must be taken into consideration. There is a risk in the Pa Enua that leaders of each island tend to impose their authority onto landowners or those who use those lands involved without due consideration of the rights of those people. It is important	NIEU, Specialists engaged (for Agriculture and Water components), ESS and Gender Specialists.

Environmental and social principles	Assessment	Potential impacts and risks – further assessment and management required for compliance	
		Description of process for environmental and social and gender safeguarding	Responsible executing agent/roles and responsibilities
		to the programme that landowners and other people who may be disadvantaged by the loss of the use of a land or resources on lands used for the projects are advised of their rights, and compensated.	
Protection of Natural Habitats	~~Principle applies to the specific project/programme but mitigation actions need to be taken in order to comply with the expected outcome of the Principle.~~Medium.	Where an activity is identified to encroach on environmentally sensitive areas through the National Environment Service ESD form, appropriate responses by way of an EIA, in the case of where significant changes to the environment will occur, or the preparation of a management plan of the risks will be carried out once the risks are identified during the programme.	NIEU, Specialists engaged (for Agriculture and Water components). This will involve the National Environment Service (EIA), the Ministry of Agriculture (Biosecurity Act 2008), Climate Change Cook Islands, Emergency Management Cook Islands, and specialized experts, e.g. civil engineer and environmental scientist.
Conservation of Biological Diversity	~~Principle applies to the specific project/programme but mitigation actions need to be taken in order to comply with the expected outcome of the~~	Where an activity is identified as encroaching on environmentally sensitive areas and threatening to an important plant, animal or bird and	NIEU, Specialists engaged (for Agriculture and Water components) and ESS Specialist. This will involve the National Environment

Environmental and social principles	Assessment	Potential impacts and risks – further assessment and management required for compliance	
		Description of process for environmental and social and gender safeguarding	Responsible executing agent/roles and responsibilities
	~~Principle.~~Medium	their ecosystems, this is addressed through the National Environment Service ESD form, appropriate responses by way of an EIA, in the case of significant changes to the environment will occur, or the preparation of a management plan of the risks will be carried out once the risks are identified during the programme.	Service (EIA), the Ministry of Agriculture (Biosecurity Act 2008), Climate Change Cook Islands, Emergency Management Cook Islands, and specialized experts, e.g. civil engineer and environmental scientist.
Climate Change	~~Principle applies to the specific project/programme but mitigation actions need to be taken in order to comply with the expected outcome of the Principle.~~Medium.	Activities such as pollution of coastal waters affecting coral growth and the burning of vegetation during site clearance for agriculture projects poses a small but nonetheless significant contribution to the main driver of climate change , i.e. emission of carbon dioxide gas into the atmosphere	NIEU Specialists engaged (for Agriculture and Water components), ESS Specialist and Climate Change Cook Islands
Pollution Prevention and Resource Efficiency	~~Principle applies to the specific project/programme but mitigation actions need to be taken in order to comply with the expected outcome of the Principle.~~Low –	There is potential risk from organic waste decomposition affecting water quality and the state of the environment from site preparations activities, disposal of packaging materials	NIEU, Specialists engaged (for Agriculture and Water components), ESS and Gender Safeguard Specialists, National

Environmental and social principles	Assessment	Potential impacts and risks – further assessment and management required for compliance	
		Description of process for environmental and social and gender safeguarding	Responsible executing agent/roles and responsibilities
	Medium	of imported goods. Mulching, composting and reuse programmes must be organised prior to site clearance.	Environment Services, Ministry of Agriculture, Ministry of Health, Red Cross, NGOs
Public Health	~~Principle applies to the specific project/programme but mitigation actions need to be taken in order to comply with the expected outcome of the Principle.~~Low – Medium	There is a risk to public health through activities that pollute ground water and coastal waters affecting the quality of drinking water and affecting fishing grounds. The foul smell from decomposing waste as a result of cleared vegetation. Habitats created from clearing activities for vector and rodent population may increase. Management of these risks can be anticipated and put in place during the inception stage.	NIEU, Specialists engaged (for Agriculture and Water components), ESS and Gender Specialists, Ministry of Health, Red Cross, NGOs
Physical and Cultural Heritage	~~The project/programme meets the standards of the Principle~~Low – Medium	No, structure, farm, community facility will alter, damage, or remove any physical cultural resources, cultural sites, and sites with unique natural values recognized as such at the community, national or international level. Traditional Leaders, Families,	NIEU, Specialists engaged (for Agriculture and Water components), ESS Specialists, Are Korero of each island or the Traditional Leaders and the Ministry of Culture

Environmental and social principles	Assessment	Potential impacts and risks – further assessment and management required for compliance	
		Description of process for environmental and social and gender safeguarding	Responsible executing agent/roles and responsibilities
		Landowners and Island Council of each island will be consulted on this issue to manage any risk that may arise.	
Lands and Soil Conservation	~~Principle applies to the specific project/programme but mitigation actions need to be taken in order to comply with the expected outcome of the Principle.~~Low – Medium	There is risk involved to the lands and soils during the preparation of sites for the AWS, nurseries, gardens, orchards, farm lands from soil erosion. The levels of risks increase from the northern group to the southern group due to topographical differences. For all sites an ESD form must be filled and risks to the environment from a soil erosion and land degradation determined and mitigating measures provided.	NIEU, Specialists engaged (for Agriculture and Water components). This will involve the National Environment Service (EIA), Engineering Division of the Infrastructure Cook Islands, Emergency Management Cook Islands, and specialized experts, e.g. civil engineer and environmental scientist.

Grievance Redress Mechanism (GRM)

Complaints management will be implemented to receive and facilitate the resolution of concerns, complaints, and grievances about the programme's environmental and social performance. When and where the need arises, this mechanism will be used for addressing any complaints that may arise during the implementation of the programme.

Concerns, complaints and grievances will be directed to the Project Management Unit (PMU) where the Environmental and Social Safeguard Specialist (ESSS) during

the programme implementation, will be the focal point to receive, record, review, and address concerns in coordination with relevant stakeholders. A complaints register will be maintained to record the date, details, and nature of each complaint, the name of the complainant, and the date and actions taken as a result of the follow-up investigation. The register will also cross-reference any non-compliance report and/or corrective action report or other relevant documentation relating to the complaint.

At the inception workshop, information summarising the grievance redress mechanism process including contact details of relevant persons and form will be provided. Table 15 presents the steps and corresponding time frame for the grievance redress mechanism.

Table 15: Grievance Redress Process

Stage	Process	Duration
1	Any concerned person, island elected or traditional chief, or other concerned party takes grievance to ESSS (contactable via PMU at Climate Change Office).	Any time
2	ESSS reviews and finds solution to the problem in consultation with island elected or traditional chief and relevant agencies.	2 weeks
3	ESSS reports back an outcome to people who submitted the grievance.	1 week
If unresolved or not satisfied with the outcome at PMU level		
4	Concerned party takes grievance through Island Council to relevant national agency (Office of the Prime Minister, etc.).	Within 2 weeks of receipt of decision in step 3
5	National agency reviews and finds a solution which may include recommendation of dispute resolution, including an appropriate body to oversee.	4 weeks
6	National agency reports back to the people who made the complaint.	1 week
If unresolved or at any stage if concerned party is not satisfied		
Concerned party can take the matter to appropriate court.		As per judicial system

D. Monitoring and Evaluation Arrangements.

M&E will be in compliance with established CIG activities management framework and will be carried out by the M&E Specialist with support from the Gender and ESS Specialists. The M&E Specialist will work and responsibilities are outlined in **Table 10.**

Activity/Project Monitoring Assessments must be provided to the NIE annually. The Project Monitoring Assessment (PMA) will be completed by the M&E Specialist with support from the DCD Director. The PMA will focus on recording the development results (outputs and outcomes) being produced by the Programme and on quality ratings (for effectiveness), offering brief comments on the Programmes relevance, effectiveness, efficiency and sustainability.

The PMA is intended for Cook Islands Government internal use for recording project quality (particularly results). It is also a documentation, communication and continuous improvement tool that will help to crystallise views on project quality, management, emerging issues and any action that is necessary.

The Strategic Results Framework of the Programme defines success indicators for programme implementation as well as the respective means of verification. A M&E system for the programme will be established, based on these indicators and means of verification. It is important to note that the Results Framework in Section F, including its indicators, targets and means of verification, will be reconfirmed during the inception phase of the programme. Any changes to the Results Framework require approval by the NIE.

A Programme **Inception Workshop** will be conducted within four months of project start up with the full project team, relevant government counterparts, national stakeholders, partners, and NIE. The Inception Workshop is crucial to building ownership for project results and to plan the first year annual work plan. A fundamental objective of the Inception Workshop will be to present the modalities of Programme implementation and execution, document mutual agreement for the proposed executive arrangements amongst stakeholders, and assist the Programme team to understand and take ownership of the Programmes goals and objectives. Another key objective of the Inception Workshop is to introduce the Programme team, which will support the Programme during its implementation. An Inception Workshop Report will be prepared and shared with participants to formalize various agreements decided during the meeting.

Quarterly Progress Reports as defined by TTV will be prepared by the Project team and verified by PAC. **Annual Project Reports** will be prepared to monitor progress made since project start and in particular for the previous reporting period. These annual reports include, but are not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative);
- Project outputs delivered per project Outcome (annual);
- Lessons learned/good practices;
- Annual expenditure reports;
- Reporting on project risk management.

Government authorities, members of the PAC and NIE staff will conduct regular field visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress.

In terms of financial monitoring, the PMU will provide NIE with certified periodic financial statements. The Audit will be conducted in accordance with Cook Islands

Financial Regulations and Rules and applicable audit policies on Cook Islands projects by a legally recognized auditor of the Government, or by a commercial auditor engaged by the Government. Important also is the financial process that will ensure that there is accountability at each level in the preparation to authorisation of payments. The following **Table ~~15~~16** outlines the financial control processing requirements that will be required for all financial transactions.

Table 16: Financial control process

NIEU	Cost areas	Financial Process		
		Preparer of vouchers	Reviewer	Authorisation
Financial accountant establishes procurement and financial manual; approves annual budget; releases fund replenishments on valid reporting	Project management unit	PMU administration clerk	PMU financial supervisor	OPM financial manager and Chief of Staff
	Component 1	PMU administration clerk	PMU financial supervisor	OPM financial manager and Chief of Staff
	Component 2	PMU administration clerk	PMU financial supervisor	OPM financial manager and Chief of Staff
	Component 3	MoA component coordinator	PMU financial supervisor	OPM financial manager and Chief of Staff

During Programme implementation, Annual Work Plans (AWP's) and Quarterly Work Plans (QWP's) will be used to refine project delivery targets and re-align project work upon consultation and endorsement by the PAC.

The Programme will undergo an independent **Mid-Term Evaluation (MTE)** at the mid-point of project implementation, which will determine progress being made toward the achievement of outcomes and identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of Programme implementation; highlight issues requiring decisions and actions; and present initial lessons learned about Programme design, implementation and management. Findings of this review will be incorporated as recommendations for the final half of the Programmes term. A summative **terminal evaluation** will be conducted 3 months before Programme closure.

The budgets for the Executing Entity and the Implementing Entity are provided as **Table ~~16~~17.** Programme Monitoring and Evaluation budget is included as part of the Implementing Entity Budget.

Table 17: Monitoring and Evaluation Plan and Budget

Activity	Cost particular	Unit type	Unit cost (NZD)	Quantity	Total (NZD)	USD
Monitoring & evaluation specialist	Fees	Month	4,000	6	24,000	17,520
Project inception	Expenses	Lump sum	5,000	1	5,000	3,650
Mid-term independent evaluation	Fees + expenses	Lump sum	12,000	1	12,000	8,760
Terminal independent evaluation	Fees + expenses	Lump sum	20,000	1	20,000	14,600
Annual audits	Fees	Annual	2,000	3	6,000	4,380
Spot Check audits	Fees	Semi-annual	1,500	6	9,000	6,570
Total					76,000	55,480

E. Results Framework for the Project/Programme

Table 18: Programme Results Framework

Outcome/Output	Indicator	Baseline	Target	Sources of verification	Assumptions
Component 1 **Strengthening disaster risk governance to manage disaster risk and enhancing disaster preparedness for effective response to "Build Back Better" in recovery, rehabilitation and reconstruction**					
Outcome: prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social health, cultural, educational, environmental, technological and institutional data.	Integrated and inclusive data sets created	Separate and non-integrated partial data sets	An integrated and inclusive data base is established one year from implementation of the programme	Emergency Management Cook Islands (EMCI) Manager	EMCI Manager is held responsible to ensure the outcome is achieved
Output 1: Expanded GeoPortal Disaster Risk Management	Number of Pa Enua islands with baseline	Nil Pa Enua with baseline and updated	All 11 Pa Enua with baseline and	GeoPortal reports on the number	Each Pa Enua island administratio

Outcome/Output	Indicator	Baseline	Target	Sources of verification	Assumptions
Information System	and updated datasets in the GeoPortal	datasets in the GeoPortal	updated datasets in the GeoPortal	of Pa Enua with baseline and updated datasets	n has a trained GeoPortal officer All stakeholders co-operate to share information
			Three critical high level hazard risk assessment dataset in the GeoPortal	GeoPortal Reports	
	Formalise the GIS Taskforce Meetings	No GIS Taskforce	At least 6 meetings per year	Minutes of the GIS taskforce meetings	Co-operation of all stakeholders to share information.
Output 2: Management response tools linking hazard risk assessments and the DRM Plans	Number of management response tools/Early Warning Systems	No. management response tools	Three management response tools	GeoPortal Reports Quarterly Reports Back to office Travel Reports	Each Pa Enua island administration has trained GeoPortal officer coordinating with a nominated EMCI officer
	Usage of management response tool/Early Warning System	No Management response tools	Monthly usage of management tools		
	New open source or commercial App obtained for the GeoPortal Climate Early Warning Systems are operating on Nassau and Suwarrow	No App No Climate Early Warning Systems on Nassau and Suwarrow	At least one App is obtained and used Climate Early Warning Systems are installed and operating on Nassau and Suwarrow	Feedback from Users GeoPortal Reports Nassau and Suwarrow Executive Officers	Fit for purpose open source or commercial Apps are obtainable Suitable officers are appointed and trained on Nassau and Suwarrow
Output 3: Robust Pa Enua DRM Plans and capacity building	Number of Pa Enua DRM Plans updated to 2017 National DRM Plan	One Pa Enua DRM Plan (Atiu) updated to 2017 National DRM Plan	All 10 Pa Enua DRM Plans updated to 2017 National DRM Plan	Updated DRM Reports are published on Website	Information gathered is useful Island administration supports the work of the Geo
	Number of Geo Portal	No officers	A minimum of one on	Training and Duty Travel	

Outcome/Output	Indicator	Baseline	Target	Sources of verification	Assumptions
	Officers trained on each island by Gender		each island including equal number of women	Reports Training Evaluation Reports	Portal Officer Training is attended by all stakeholders
	Develop user and administration manual for the GeoPortal	Number already trained – (baseline established at inception)	A minimum of 1 training workshop on each island including equal number of women		

Outcome/Output	Indicator	Baseline	Target	Sources of verification	Assumptions
Component 2 **Integrated water security management planning and implementation for Pa Enua communities**					
Outcome: Strengthened drinking water security including increased institutional capacity and coordination for integrated water management.	Number of new or existing drinking sources effectively managed for the basic water requirements during periods of drought	Existing Water Capacity for each Island as identified in the Island Profiles	20% increase in safe water over Baseline	Back to office Reports of Pa Enua Division Reports from Water Security Engineer Island Government reports Red Cross Reports Ministry of Health Reports	Atiu pilot activity is adaptable to all other Pa Enua
	Number of communities that maintain safe drinking water supplies to meet basic needs at all times including during periods of drought				
Output 1:Robust water Monitoring, reporting and assessment systems established and implemented through increased facilitation and the sharing of knowledge	Number of Water Committees	None	Quarterly meetings	Minutes of Water Committee Meeting	Water Committees share information
	Number of rain gauges, rainfall harvesting surveys, water resources and storage assessments	% water systems complete to date (baseline established at inception)	Quarterly increase for each island	GeoPortal reports Water Security Engineer Reports Disaster	Administrative assistance is provided to the Water Engineer

Outcome/Output	Indicator	Baseline	Target	Sources of verification	Assumptions
	disaggregated by dataset included on the Geo Portal			Management/GIS Specialist	
	Number of reports available to decision makers on local monitoring and assessment information	Nil (baseline established at inception)	Quarterly increase for each island	GeoPortal reports Water Security Engineer Reports Disaster Management/GIS Specialist	Administrative assistance is provided to the Water Engineer
	Number of drought assessment methodologies developed and implemented and used	Nil (baseline established at inception)	At least one for the North and One for the South	GeoPortal reports Water Security Engineer Reports Disaster Management/GIS Specialist	Administrative assistance is provided to the Water Engineer
Output 2. Water Resilient Plans including drinking water safety practices	Number of these drought assessments methodologies being used to support local drought management plans	Nil (baseline established at inception)	At least one in the North and One in the south	Island Government Reports GeoPortal reports Water Security Engineer Reports	Administrative assistance is provided to the Water Engineer
	Number of communities and agencies trained in coping with future water security threats	Nil (baseline established at inception)	Year on Year increase in trained communities and agencies for each island	GeoPortal reports Water Security Engineer Reports Red Cross Reports	Administrative assistance is provided to the Water Engineer
	Number of community level drinking water safety plans reviewed and updated and implemented	Nil (baseline established at inception)	All plans reviewed and updated by Year 3 of the project	Water Security Engineer Reports Red Cross Reports	Administrative assistance is provided to the Water Engineer
	% coverage of Schools and island communities	% existing coverage of schools and communities	100% coverage of Schools	Water Security Engineer reports	Administrative assistance is provided to the Water

Outcome/Output	Indicator	Baseline	Target	Sources of verification	Assumptions
		(baseline established at inception)	and Island Communities by Year 3 of the Project		Engineer
Output 3. Allocation of Water Security Fund	Number of proposals approved and implemented	Nil	Full utilisation of fund by Year 3 of the programme	Minutes of Water Committee Meetings Water Security Engineer Reports Red Cross Reports	Water Committee Chair responsible

Outcome/Output	Indicator	Baseline	Target	Sources of verification	Assumptions
Component 3 Revitalised agricultural production systems strengthening island food sources and livelihoods in the Pa Enua					
Outcome: Increased island food security resilience and preparedness for disasters	Number of irrigation system installed	Unknown. A priority for MoA to establish	One farm per island in Southern Group	Island agriculture reports	Responsibility for agriculture development returned to MoA
	Displacement of island vegetables imports	Unknown. A priority for MoA to establish	50% of vegetable imports displaced in Northern Group	Island agriculture reports	Responsibility for agriculture development returned to MoA
	Fruit products sold in Rarotonga	Unknown. A priority for MoA to establish	33% rise in fruit products sold from Southern Group	Island agriculture reports Horticultural reports	Responsibility for agriculture development returned to MoA
	Improved variety of staple crops	Unknown. A priority for MoA to establish	50% of planted crops have improved variety	Island agriculture reports	Responsibility for agriculture development returned to MoA
Output 1: Island plant and seedling nurseries	Number of operating island nurseries	A priority for MoA to establish the number of existing nurseries?	One per island in the Pa Enua	Island agriculture reports Agriculture specialist reports	Responsibility for agriculture development returned to MoA
	Number of	Nil (baseline	All nurseries	Agriculture	Responsibility

Outcome/Output	Indicator	Baseline	Target	Sources of verification	Assumptions
	nursery business plans	established at inception)	have business plans	specialist reports	for agriculture development returned to MoA
	Production capacity utilisation of island nurseries	Unknown. A priority for MoA to establish existing production capacity	75% production capacity utilised per nursery	Island agriculture reports Agriculture specialist reports	Responsibility for agriculture development returned to MoA
	Operating costs recovery	Unknown. A priority for MoA to establish existing operating costs	100% of operating costs recovered	Island agriculture reports Agriculture specialist reports	Responsibility for agriculture development returned to MoA
Output 2: School gardens for the northern group islands	Number of operating school gardens	Two	One per school in Northern Group	Ministry of education reports Island agriculture reports Agriculture specialist reports	Effective collaboration between MOE, MoA and Te Ipukarea Society
	Number of students by gender taught science, social science and health & wellbeing units using school garden	Nil (baseline established at inception)	50% of school population annually	Ministry of Education reports Island agriculture reports Agriculture specialist reports	Effective collaboration between MOE, MoA and Te Ipukarea Society
Output 3: Tropical orchards technical support for Southern Group islands	Number of orchard with technical support	Two	12 orchards assisted in Southern Group	Island agriculture reports Horticulturalist reports	A MoA fruit horticulturalist is appointed and coordinates activities with the Water specialist
	Number of community tree management plans implemented	Nil (baseline established at inception)	One per island in Southern Group	Island agriculture reports Horticulturalist reports	Local community participation
	Productivity of orchards	Unknown. (baseline established at inception)	50% productivity improvement in the	Island agriculture reports Agriculture	Water efficient irrigation systems are widely

Outcome/Output	Indicator	Baseline	Target	Sources of verification	Assumptions
			Southern Group	specialist reports	implemented
Output 4: Pa Enua Agriculture Knowledge Sharing Platform	Number of island integrated in AgIntel	Nil	11 islands	Island agriculture reports Agriculture specialist reports	MoA's Ag Mkt Information Bulletin widely available to Pa Enua farmers
	Number of Pa Enua farmers using E-Agriculture information	Nil	50% of Pa Enua farmers	Island agriculture reports Agriculture specialist reports	Pa Enua farmers have good access to E-Agriculture information
Output 5: Allocation of Economic Resilience Fund	Number of proposals approved and implemented	Nil	Full utilisation of fund by Year 3 of the programme	Minutes of Agriculture Committee Meetings Agriculture specialist reports	Pa Enua farmers receive support from Ag/Hort Specialists

F. Programme Alignment with the Results Framework of the Adaptation Fund

Table 19: Programme Alignment with AF Results Framework

Programme/Project Objective(s)[30]	Programme/Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Strengthening national and local capacity for monitoring and decision making to reduce and respond to risks associated to climate change	Reach of apps to alert Pa Enua island administration and communities	Outcome 1: Reduced exposure to climate-related hazards and threats	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	358,750
Project Outcome(s)	Project Outcome Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount (USD)
Prevent new and reduce existing disaster risks, hazards and threats	Integrated data sets inclusive of economic, structural, legal, social health, cultural, educational, environmental, technological and institutional are created at the Pa Enua level and aggregated at the national level	Output 1.1: Risk and vulnerability assessments conducted and updated	1.1 No. of projects /programmes that conduct and update risk and vulnerability assessments (by sector and scale) 1.2 No. of early warning systems (by scale) and No. of beneficiaries covered	529,750
Strengthened drinking water security including increased institutional capacity and coordination for integrated water management to reduce risks associated with climate induced socioeconomic and environmental losses	Number of new or existing drinking sources effectively managed for the basic water requirements during periods of drought Number of communities that maintain safe drinking water supplies to meet basic needs at all times including	Output 2.1: Strengthened capacity of national sub-national centres and networks to respond rapidly to extreme weather events Output 4: Vulnerable development sector services and infrastructure assets	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender) 4.1.2. No. of physical assets strengthened or constructed to withstand conditions	735,700

[30] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

	during periods of drought	strengthened in response to climate change impacts, including variability	resulting from climate variability and change (by sector and scale)	
Increased island food security resilience and preparedness for disasters	Number of water efficient irrigation system installed Displacement of imported food with island vegetables Pa Enua fruit products sold in Rarotonga to meet tourist demand Improved variety of staple crops that are resilient in the face of increased climate variability and climate change are grown at the Pa Enua level for local consumption	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1.No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies	1,236,700

G. Detailed Budget Costs

The following ~~Table 19~~Table 20 shows detailed budgets by component. Travel costs for all components have been guided by SRIC and Red Cross estimates. Further budget notes are presented in Annex 7 while major items by component are discussed below.

Component 1:

- AWS equipment, transport and travel were informed by CLEWS tender in SRIC provided by MetService.
- Survey Pa Enua support costs, Licenses for ArcGIS and Apps and specialist fees have been guided by EMCI estimates.

Component 2:

- Fees for water specialist have been guided by OPM estimates.
- Water making equipment and survey Pa Enua support have been guided by Red Cross and OPM estimates.
- Fund size of WSF has been balanced with available funds from total budget requested and relativity with other components. Fund allocation has been guided by OPM estimates for resourcing.

Component 3:

- Agriculture specialist fees, AgIntel, E-Agriculture and nursery supplies/equipment have been guided by MoA estimates.
- Education resources have been guided by MoE estimates.
- Schools garden costs have been guided by Te Ipukarea Society estimates.
- Horticulturalist fees, tropical orchard equipment and supplies have been guided by MoA and FAO-Chamber of Commerce estimates.
- Fund size of ERF has been balanced with available funds from total budget requested and relativity with other components.

Table 20: Detailed Budgets by Component and Output

		Activity	Cost particular	Unit type	Unit cost	Quantity	Year 1	Year 2	Year 3	Total	Total
					New Zealand Dollars (USD:NZD = 0.73)						USD
Component 1: Strengthening disaster risk governance to manage disaster risk and enhancing disaster preparedness for effective response to "Build Back Better" in recovery, rehabilitation and reconstruction											
			Media & communications	Annual	3,500	3	3,500	3,500	3,500	10,500	7,665
			Project administration	Annual	10,000	3	10,000	10,000	10,000	30,000	21,900
		National workshop for DRM	Rarotonga travel, venue, catering, accomodation	Meeting	15,000	1	15,000			15,000	10,950
			Telecommunications & media	Annual	6,500	3	6,500	6,500	6,500	19,500	14,235
			Agency component coordination	Annual	25,000	3	25,000	25,000	25,000	75,000	54,750
			Specialist travel South Group	Round	2,750	1	2,750			2,750	2,008
			Per diem	Day	70	15	1,050			1,050	767
			Accommodation	Day	100	15	1,500			1,500	1,095
			ESS travel South Group	Round	2,750	1	2,750			2,750	2,008
			Per diem	Day	70	15	1,050			1,050	767
			Accommodation	Day	100	15	1,500			1,500	1,095
Output 1: Expanded GeoPortal Disaster Risk Management Information System	1.1.1	Contracting Emergency Management/GIS Specialist	Fees	Month	4,500	30	45,000	45,000	45,000	135,000	98,550
			Specialist + EMCI staff x 1		-					-	-
			Travel North Group	Lump sum	50,000	1	25,000	25,000		50,000	36,500
			Per diem	Lump sum	70	120	4,200	4,200		8,400	6,132
			Accommodation	Day	100	120	6,000	6,000		12,000	8,760
			Venue/ catering	Meeting	250	10	1,250	1,250		2,500	1,825
			Training & on-island costs	Lump sum	10,000	1		10,000		10,000	7,300
											-
	1.1.2	GIS Taskforce policy-making	Venue/ catering	Meeting	150	6	300.00	300.00	300.00	900	657
			ArcGis licenses & maintenance	Annual	15,000	3	15,000	15,000	15,000	45,000	32,850
Output 2: Management response tools linking hazard risk assessments and the DRM Plans	1.2.1	Developing DRM tools and interface	Fees incl in specialist		-					-	-
		Sourcing apps to enhance GeoPortal data capture and alert information dissemination	Fees incl in specialist		-					-	-
	1.2.2		Licenses apps	Lump sum	10,000	1		10,000		10,000	7,300
	1.2.3	Installing AWS in Suwarrow and Nassau	Equipment	AWS	15,000	2	30,000			30,000	21,900
			Consultant	Lump sum	5,000	1	5,000			5,000	3,650
			Travel	Round	20,000	1	20,000			20,000	14,600
			Per diem	Day	70	12	840			840	613
			Accommodation	Day	100	12	1,200			1,200	876
Output 3: Robust Pa Enua DRM Plans and capacity building	1.3.1	Island DRM surveys for GeoPortal	Survey cost Pa Enua support	Lump sum	33,000	1		33,000		33,000	24,090
			Specialist Travel South Group	Round	2,750	1	2,750			2,750	2,008
			Per diem	Day	70	20	1,400			1,400	1,022
			Accommodation	Day	100	20	2,000			2,000	1,460
	1.3.2	Upgrading island DRM plans to align with national DRM policy	EMCI staff x 2 + Red Cross x 1		-					-	-
			Travel South Group	Round	8,250	6	16,500	16,500	16,500	49,500	36,135
			Per diem		70	360	8,400	8,400	8,400	25,200	18,396
			Accommodation	Day	100	360	12,000	12,000	12,000	36,000	26,280
			Venue/ catering	Meeting	250	30	2,500	2,500	2,500	7,500	5,475
			Training costs	Lump sum	20,000	1		20,000		20,000	14,600
	1.3.3	Training in GeoPortal and implementing the DRM plans	Specialist + EMCI staff x 2		-					-	-
			Travel South Group	Round	8,250	2		8,250	8,250	16,500	12,045
			Per diem	Day	70	120		4,200	4,200	8,400	6,132
			Accommodation	Day	100	120		6,000	6,000	12,000	8,760
			Training costs	Lump sum	20,000	1		20,000		20,000	14,600
										-	-
TOTAL							**269,940**	**292,600**	**163,150**	**725,690**	**529,754**

		Activity	Cost particular	Unit type	Unit cost	Quantity	Year 1	Year 2	Year 3	Total	Total
					New Zealand Dollars (USD:NZD = 0.73)						USD
Component 2: Integrated water security management planning and implementation for Pa Enua communities											
			Media & communications	Annual	3,500	3	3,500	3,500	3,500	10,500	7,665
			Project administration	Annual	10,000	3	10,000	10,000	10,000	30,000	21,900
		National workshop for water security	Rarotonga travel, venue, catering, accomodation	Meeting	15,000	1	15,000			15,000	10,950
			Telecommunications	Annual	1,500	3	1,500	1,500	1,500	4,500	3,285
			Agency component coordination	Annual	12,000	3	12,000	12,000	12,000	36,000	26,280
			Specialist travel South Group	Round	2,750	1		2,750		2,750	2,008
			Per diem	Day	70	15		1,050		1,050	767
			Accommodation	Day	100	15		1,500		1,500	1,095
			ESS travel South Group	Round	2,750	1		2,750		2,750	2,008
			Per diem	Day	70	15		1,050		1,050	767
			Accommodation	Day	100	15		1,500		1,500	1,095
Output 1: Robust water monitoring, reporting and assessment systems established and implemented	2.1.1	Contracting water security Specialist	Fees	Month	4,500	30	45,000	45,000	45,000	135,000	98,550
	2.1.2	Water Committee policy-making	Venue/ catering	Meeting	100	12	400	400	400	1,200	876
	2.1.3	National water security data warehouse	Specialist + OD		-					-	-
			Travel North Group	Round	25,000	1	25,000			25,000	18,250
			Per diem	Day	70	36	2,520			2,520	1,840
			Accommodation	Day	100	36	3,600			3,600	2,628
			Travel South Group	Round	5,500	1	5,500			5,500	4,015
			Per diem	Day	70	30	2,100			2,100	1,533
			Accommodation	Day	100	30	3,000			3,000	2,190
			Survey cost Pa Enua support	Lump sum	33,000	1	33,000			33,000	24,090
			Water measuring equipment	Lump sum	20,000	1	20,000			20,000	14,600
Output 2: Water Resilient Plans including drinking water safety practices	2.2.1	Upgrading island water security plans to improve water resilience	Specialist + OD		-					-	-
			Travel North Group	Round	25,000	1		25,000		25,000	18,250
			Per diem	Day	70	36		2,520		2,520	1,840
			Accommodation	Day	100	36		3,600		3,600	2,628
			Travel South Group	Round	5,500	1		5,500		5,500	4,015
			Per diem	Day	70	30		2,100		2,100	1,533
			Accommodation	Day	100	30		3,000		3,000	2,190
			Venue/ catering	Meeting	250	11		2,750		2,750	2,008
	2.2.2	Water quality testing programme	Fees incl in specialist		-					-	-
			Travel included		-					-	-
			Equipment testing	Island	1,000	11		11,000		11,000	8,030
	2.2.3	Water maintenance training including WASH	MoH & Red Cross		-						-
			Travel North Group	Round	25,000	1			25,000	25,000	18,250
			Per diem	Day	70	48			3,360	3,360	2,453
			Accommodation	Day	100	48			4,800	4,800	3,504
			Water Quality testing Consumables	Lump sum	5,000	1		5,000		5,000	3,650
		(Complement Water makers and On site testing of Public Water Standpipes)	Consumables - Water Quality Testing for Ecoli	Lump sum	10,000	1	5,000	3,000	2,000	10,000	7,300
			Equipment water making desalination	Lump sum	50,000	1	50,000			50,000	36,500
			Consumables water making desalination	Lump sum	10,000	1	10,000			10,000	7,300
			Venue/ catering	Meeting	250	22		5,500		5,500	4,015
Output 3: Allocation of Water Security Fund	2.3.1	Set up criteria and governance for the WSF	Fees incl in specialist		-					-	-
	2.3.2	Advising proponents on project proposals	Fees incl in specialist		-					-	-
	2.3.3	WSF committee governance	Venue/ catering	Meeting	100	12	400	400	400	1,200	876
	2.3.4	Grant administration and monitoring	Fees incl in specialist		-					-	-
			Fund preliminary allocation							-	-
			Water storage	Lump sum	150,000	1	50,000	100,000		150,000	109,500
			New community tanks	Lump sum	175,000	1	100,000	75,000		175,000	127,750
			Repair community tanks	Lump sum	175,000	1	100,000	75,000		175,000	127,750
TOTAL							**497,520**	**402,370**	**107,960**	**1,007,850**	**735,731**

		Activity	Cost particular	Unit type	Unit cost	Quantity	Year 1	Year 2	Year 3	Total	Total
					New Zealand Dollars (USD:NZD = 0.73)						USD
Component 3: Revitalised agricultural production systems strengthening island food sources and livelihoods in the Pa Enua											
			Media & communications	Annual	3,500	3	3,500	3,500	3,500	10,500	7,665
			Project administration	Annual	10,000	3	10,000	10,000	10,000	30,000	21,900
		National workshop for agriculture	Rarotonga travel, venue, catering, accomodation	Meeting	15,000	1	15,000			15,000	10,950
			Telecommunications	Annual	1,500	3	1,500	1,500	1,500	4,500	3,285
			Agency component coordination	Annual	12,000	3	12,000	12,000	12,000	36,000	26,280
			Specialist travel South Group	Round	2,750	1			2,750	2,750	2,008
			Per diem	Day	70	15			1,050	1,050	767
			Accommodation	Day	100	15			1,500	1,500	1,095
			ESS travel South Group	Round	2,750	1			2,750	2,750	2,008
			Per diem	Day	70	15			1,050	1,050	767
			Accommodation	Day	100	15			1,500	1,500	1,095
Output 1: Island plant and seedling nurseries	3.1.1	Contracting agriculture specialist	Fees	Month	6,000	6	12,000	12,000	12,000	36,000	26,280
	3.1.2	Design/review plant nursery for each island	Specialist + MOA staff		-					-	-
			Travel North Group	Round	25,000	1	25,000			25,000	18,250
			Per diem	Day	70	48	3,360			3,360	2,453
			Accommodation	Day	100	48	4,800			4,800	3,504
			Travel South Group	Round	5,500	1	5,500			5,500	4,015
			Per diem	Day	70	30	2,100			2,100	1,533
			Accommodation	Day	100	30	3,000			3,000	2,190
	3.1.3	Build and operate plant nursery for each island	Specialist + MOA staff		-					-	-
			Supplies	Nursery	10,000	11	50,000	50,000	10,000	110,000	80,300
			Equipment	Nursery	10,000	11	50,000	50,000	10,000	110,000	80,300
			Travel North Group	Round	25,000	1	25,000			25,000	18,250
			Per diem	Day	70	84	5,880			5,880	4,292
			Accommodation	Day	100	84	8,400			8,400	6,132
			Travel South Group	Round	5,500	1	5,500			5,500	4,015
			Per diem	Day	70	50	3,500			3,500	2,555
			Accommodation	Day	100	50	5,000			5,000	3,650
Output 2: School gardens for the northern group islands	3.2.1	Planning for gardens with schools in Northern Group	Specialist + MOA staff		-					-	-
Schools: 2 @ for Manihiki and Penrhyn			Travel North Group	Round	25,000	1	25,000			25,000	18,250
1@ for:			Per diem	Day	70	84	5,880			5,880	4,292
Pukapuka			Accommodation	Day	100	84	8,400			8,400	6,132
Nassau			Educational resources	Lump sum	30,000	1	30,000			30,000	21,900
Rakahanga	3.2.2	Build, equip and operate school garden	Supplies	Garden	10,000	7	70,000			70,000	51,100
Palmerston - completed			Equipment	Garden	50,000	7	350,000			350,000	255,500
			Travel North Group	Lump sum	25,000	1	25,000			25,000	18,250
			Per diem	Day	70	84	5,880			5,880	4,292
			Accommodation	Day	100	84	8,400			8,400	6,132
	3.2.3	Advice for home gardens	Travel incl		-					-	-
											-
Output 3: Tropical orchards technical support for southern group islands	3.3.1	Contracting fruit horticulturalist	Fees	Month	6,000	9	18,000	18,000	18,000	54,000	39,420
	3.3.2	Assessing and planning for orchards in Southern Group	Horticulturalist + MOA staff		-					-	-
			Travel South Group	Round	5,500	1	5,500			5,500	4,015
			Per diem	Day	70	50	3,500			3,500	2,555
			Accommodation	Day	100	50	5,000			5,000	3,650
			Venue/ catering	Meeting	250	5	1,250			1,250	913
	3.3.3	Equip and build capacity to implement plans	Fees incl in horticulturalist		-					-	-
			Supplies	Island	20,000	5		100,000		100,000	73,000
			Equipment	Island	20,000	5		100,000		100,000	73,000
	3.3.4	Strategy for agriculture water use and supply	Fees incl in horticulturalist		-					-	-
			Equipment	Orchard	20,000	5		100,000		100,000	73,000
Output 4: Pa Enua Agriculture Knowledge Sharing Platform	3.4.1	Expand AgIntel database to Pa Enua	AgIntel specialist	Annual	15,000	2	15,000	15,000		30,000	21,900
			AgIntel survey support	Island	2,000	11	7,333	7,333	7,333	22,000	16,060
	3.4.2	Knowledge sharing of E-Agriculture information	E-Agriculture specialist	Annual	15,000	1.5	15,000	7,500		22,500	16,425
										-	-
Output 5: Allocation of Economic Resilience Fund	3.5.1	Set up criteria and governance for the ERF	Fees incl in specialist		-					-	-
	3.5.2	Advising proponents on project proposals	Fees incl in specialist		-					-	-
	3.5.3	ERF committee governance	Venue/ catering	Meeting	100	12	400	400	400	1,200	876
	3.5.4	Grant administration and monitoring	Fees incl in specialist		-					-	-
			Fund preliminary allocation							-	-
			Water reticulation	Lump sum	87,000	1		43,500	43,500	87,000	63,510
			Fencing	Lump sum	87,000	1		43,500	43,500	87,000	63,510
			Business activities	Lump sum	87,000	1		43,500	43,500	87,000	63,510
TOTAL							**850,583**	**617,733**	**225,833**	**1,694,150**	**1,236,730**

Table ~~20~~21 shows the breakdown of Execution costs and Implementing Entity management fee use. The execution costs are:

- Core programme staff (project coordinator, administration clerk, financial supervisor) are not full-time estimate throughout the programme. They are estimated to be engaged for 30 months throughout the 36 month programme period.
- PMU specialists (ESS, gender, communications/media) are engaged based on deliverables and not time-based. The specialists will be supported by core programme staff and use of PMU office facility.
- Regular meetings of governance bodies (Project Advisory Committee, National Climate Change Platform) are resourced by the PMU.
- Office will be hosted in the OPM and monthly office costs and printing costs for publications have been budgeted.

Table 21: Breakdown of Execution Costs and Implementing Entity Management Fee

	Activity	Cost particular	Unit type	Unit cost	Quantity	Year 1	Year 2	Year 3	Total	Total
				New Zealand Dollars (USD:NZD = 0.73)						USD
Project execution costs	**Project management unit**									
	Project coordinator	Fees	Month	4,000	30	40,000	40,000	40,000	120,000	87,600
	Administration clerk	Fees	Month	1,200	30	12,000	12,000	12,000	36,000	26,280
	Financial supervisor	Fees	Month	3,500	30	35,000	35,000	35,000	105,000	76,650
	Office support	Office expenses	Month	500	30	5,000	5,000	5,000	15,000	10,950
	Gender Specialist	Fees	Month	4,500	4	6,000	6,000	6,000	18,000	13,140
	Environmental and Social Safeguard Specialist	Fees	Month	4,500	4	6,000	6,000	6,000	18,000	13,140
	Communications, Media Awareness Specialist	Fees	Month	4,500	9	13,500	13,500	13,500	40,500	29,565
	Technical reports	Printing	Lump sum	4,500	1	1,500	1,500	1,500	4,500	3,285
	Meetings of Project Advisory Committee	Venue/ catering	Meeting	100	12	400	400	400	1,200	876
	Meetings of National Climate Change Platform	Venue/ catering	Meeting	250	6	500	500	500	1,500	1,095
									-	-
TOTAL						**119,900**	**119,900**	**119,900**	**359,700**	**262,581**
Implementing entity oversight costs	**National implementing unit**									
	National project manager	Fees	Month	5,500	30	55,000	55,000	55,000	165,000	120,450
	Financial accountant	Fees	Month	4,000	20	26,667	26,667	26,667	80,000	58,400
	Monitoring & evaluation specialist	Fees	Month	4,000	6	8,000	8,000	8,000	24,000	17,520
	Project inception	Expenses	Lump sum	5,000	1	5,000			5,000	3,650
	Mid-term independent evaluation	Fees + expenses	Lump sum	12,000	1		12,000		12,000	8,760
	Terminal independent evaluation	Fees + expenses	Lump sum	20,000	1			20,000	20,000	14,600
	Annual audits	Fees	Annual	2,000	3	2,000	2,000	2,000	6,000	4,380
	Spot Check audits	Fees	Semi-annual	1,500	6	3,000	3,000	3,000	9,000	6,570
TOTAL						**99,667**	**106,667**	**114,667**	**321,000**	**234,330**

H. Disbursement Schedule with Time-bound Milestones.

Table 22: Disbursement Schedule with Time-Bound Milestones

Milestones	Timeline	Disbursement Rate	NZD	USD
Six-month pre-inception phase	Jul-2018	5%	205,420	149,956
Project Inception*	Nov-2018	45%	1,848,776	1,349,606
Mid-term Review	Jan-2020	35%	1,437,937	1,049,694
Programme Completion	Jun-2021	8%	328,671	239,930
Terminal Evaluation	Sep-2021	2%	82,168	59,982
Project/Programme Closing	Dec-2021	5%	205,420	149,956
Total		100%	4,108,390	2,999,125

*Frontloading of disbursements will ensure that Year 1 expenditure can be adequately covered and accommodating Water Security Fund and Economic Resilience Fund disbursements commencing in Year 2 (July 2019).

ADAPTATION FUND

Letter of Endorsement by Government

GOVERNMENT OF THE COOK ISLANDS
MINISTRY OF FOREIGN AFFAIRS AND IMMIGRATION

7th August 2017

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for Pa Enua Action for Resilient Livelihoods Project (PEARL)

In my capacity as designated authority for the Adaptation Fund in the Cook Islands, I confirm that the above national project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the Cook Islands.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the Ministry of Finance and Economic Management and executed by the Climate Change Division of the Office of the Prime Minister.

Sincerely,

Ms Tepaeru Herrmann
Secretary, Ministry of Foreign Affairs and Immigration
Designated Authority for the Cook Islands to the Adaptation Fund

ADAPTATION FUND

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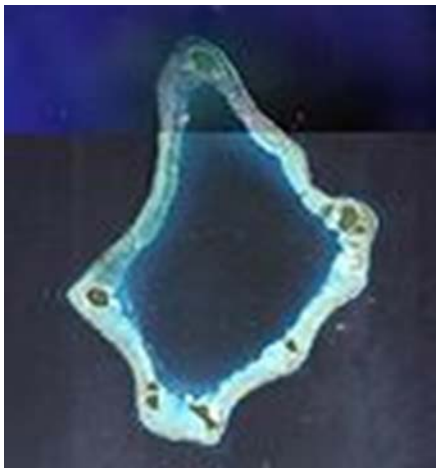
Annex 1: Island Profiles

Palmerston



Population	(2016) Resident Population 57, 53% female; 13 Households
Land/lagoon area and use	500 km north of Rarotonga Land Area: 2.1 km^2 Length of Reef: 26 km
	Palmerston is an atoll formed from an old volcano, which rises 4,000 meters from the ocean floor and comprised of six islets (Palmerston, Northern Island, Toms, Primrose, Cooks and Birds Island) joined together in a 30km string of surrounding reef. Palmerston, also known as Home Island, is the biggest islet with its highest point of about 5 metres above sea level. Palmerston is a major nesting site for green turtle, which is hunted for subsistence. Rare seabirds also nest on Palmerston. The soil of the six islets along the reef is infertile and not suitable for annual crops however there areas known locally as "planting pits" which have been created by composting, and a range of crops is grown, including breadfruit, pawpaw, lime, taro, and banana. In addition are the typical atoll tree crops of coconut and pandanus. Indigenous trees such as ngangie and toa are prevalent on all the islets.
Key sectors, issues and vulnerabilities	All 13 households have each more than two PE tanks with minimum of 11,000litre rainwater holding capacity. The household tanks are supplemented by three community tanks, which are located at the school and at the catchment building. Total storage capacity is 0.47m litres households and 0.23m litres community tanks. Economic –Palmerston's parrot fish export program benefits from the recently completed solar energy system providing 24 hour power for the effective storage of catch. Robust management is required to address concerns around the sustainability of the parrotfish as current stocks are assessed as being vulnerable. Access to reliable and energy efficient freezing will enable fishermen to spread their catch over much longer time horizons, rather than a 'rush to fish' when there is news of upcoming transport. In tourism, yacht arrivals increased to 69 in 2015/16 (from 37 in 2014/15), as well as one research vessel, with 207 coming ashore (from 127 people in 2014/15). In addition, three cruise ships (from 4 cruises) stopped at the island, but only 2

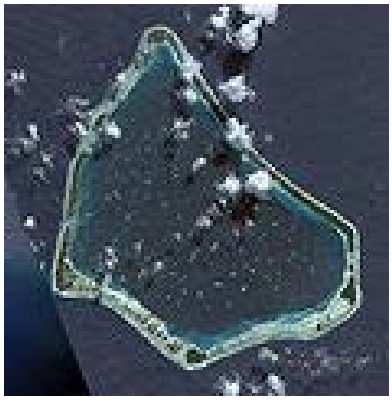
	were able to offload passengers adding 211 passenger arrivals (down from 397 passengers). The Island Government is facing capacity and capability challenge in border and bio-security controls as a port of entry. With drought a major event every 5 years, this will affect tourism as environment will no longer be attractive and there will be water and food (locally-grown) shortages. Agriculture/food security - Locally produced food include coconuts, fish, local pork and chicken The people of Palmerston rely on the lagoon to provide most of its food as well its livelihoods. Local breadfruit bear almost all year, a small amount of green vegetables are raised locally while birds are harvested during certain times of the year. Ongoing practices of netting for fish have been noted to affect corals while El Nino event induced rise in sea and lagoon temperature resulted in coral bleaching and death around the corals closer to the reef edges. Major cyclone every 10 years (category 3, 4 or 5) will affect taro plantation, nono fruit and fish resources. With drought a major event every 5 years, this will affect taro and nono exports as well as raising of pigs and goats.
Development interventions to-date	Water Security – SRIC funded water repairs (roof tie down).
	Economic Resilience – SRIC has funded safe/secure moorings that will also protect the coral reef form anchor damage. The Social Impact Fund has supported development efforts in the area of handicrafts to generate interests in arts and crafts as potential income generation from visitors. Energy demand for solar energy exceeded design load by 38%. High diesel generator usage and shorter battery life will be the local impacts of this excess demand.
	Food Security –SRIC funded agriculture (wood chipper, worm farm) and marine safety (life jackets) projects.
	Disaster response and risk management –The Government has allocated funds for the construction of a new cyclone centre (2016/17), which will provide secure shelter for residents during adverse weather conditions. The allocated funds also contain a provision for a capital shelter, workshop, and administration building. Development of the Island Disaster Management Plan 2017 – 2019 with further support required if Goal 13 of the Cook Islands National Sustainable Development Plan (NSDP) **“Strengthen resilience to combat the impacts of climate change and natural disasters”** is to be achieved.
AF Focus	Food security projects Economic resilience - small grants for development projects

Pukapuka and Nassau

Population	(2016) Resident Population 504, 49% female; 106 Households
Land/lagoon area and use	1,324 km north of Rarotonga Land Area: 1.3 km^2 Lagoon: 133 km^2 Length of Reef: 41 km Nassau: 1,324 km north of Rarotonga Land Area: 1.3 km^2 Length of Reef: 6 km
	Pukapuka is a coral atoll consisting of three islets (motus) situated at the corners of a roughly triangular lagoon. Access to the lagoon for canoes and light boats is limited to several reef passages to the north of the main village. One motu has a significant area of ancient taro and puraka swamps. Nassau is a sand cay of 121 hectares, with dense vegetation and a wide reef. It is the only island in the Northern Group without a lagoon.
Key sectors, issues and vulnerabilities	There are 95 households in Pukapuka, 94 have their own water tank and one has access to the public water catchment while all 11 households in Nassau have their own water tank. Total storage capacity is 0.80m litres (Pukapuka)/ 0.22m litres (Nassau) for households and 0.56m litres (Pukapuka)/0.12m litres (Nassau) for community tanks. Water security is one of the two biggest concerns in Pukapuka and Nassau. While the Northern Group Water Project helped with the potable water shortages, the community water tanks provides unsafe drinking water and another tanks used as a swimming pool by the children. Salt water has entered some of the fresh water lens and the shores have receded. Economic – Fully reticulated renewable energy to all homes has been recently established in Pukapuka and Nassau opening significant economic opportunities to both islands. Financial sustainability of the system depends on introduction of user charges. In Pukapuka and Nassau the environment is the economy and the economy is the environment. The food comes from the environment, supplemented by cargo supplies of flour, sugar and tin meats. Agriculture/food security - Food security is one of two biggest concerns in Pukapuka and Nassau. Pukapuka and Nassau have a highly regulated lauhi system to protect the motus. Half of Nassau is a protected ecological reserve. Taro and pulaka are grown in the fertile taro beds and on the motus, ensuring a steady supply of taro. The Kau Wo Wolo regulates the lagoon and fishing areas in a lauhi system to protect different species seasonally. The taro beds flood during heavy

	rains and salt water flooded the beds during cyclones.
Development interventions to-date	Water Security – The Northern Water Project will improve Rain Water Harvesting and storage by repairing and restoring community water tanks on Pukapuka, Nassau, Penrhyn, Manihiki and Rakahanga. This will provide an additional 2.5 million litres of water to the communities and improve water security for the northern islands, enhancing their resilience to natural disasters and strengthen their disaster management capabilities. SRIC also funded water project (community tanks repair) in Pukapuka that will increase storage capacity by 0.2m litres. SRIC funded multi-purpose shelter in Nassau for improved sanitation.
	Economic Resilience – In Pukapuka, SRIC funded fishing boat/trailer. In Nassau, SRIC funded marine projects (boat, vaka canoe). The Pukapuka and Nassau communities' energy demand is lower than design load as these have not been previously electrified and may have financial constraints in purchasing new appliances and paying for electricity.
	Food Security – In Pukapuka, SRIC funded food security projects (communal hydroponics and fencing). Small projects focused on adapting to climate change such as the taro drainage and fishing boat projects will improve food security and build community resilience. In Nassau, SRIC funded a school communal garden with fencing.
	Disaster response and risk management –The Government has allocated funds for the completion of hospital construction and a roofing project for the Yato cargo shed, the airport building, and the Government house, and Cyclone Centre construction for Nassau (2017/18). Development of the Island Disaster Management Plan 2017 – 2019 with further support required if Goal 13 of the Cook Islands National Sustainable Development Plan (NSDP) **"Strengthen resilience to combat the impacts of climate change and natural disasters"** is to be achieved.
AF Focus	Food security - Small home gardening Water security - Mould for cement water tank Economic resilience – self-development? Disaster response and risk management - coastal protection (sea wall)

Manihiki



Population	(2016) Resident Population 210, 43% female; 71 Households
Land/lagoon area and use	1,204 km north of Rarotonga Land Area: 5.4 km^2 Lagoon Area: 41 km^2 Length of Reef: 30 km
	Manihiki Island is the second largest island in the Northern group. It is a low lying coral atoll comprised of some forty islets surrounding a deep central lagoon. The lagoon area constitutes a crucial marine resource. There is no land suitable for both annual and tree crops. The main vegetation is coconut, pandanus, and a few breadfruit trees. Indigenous trees such as ngangie and toa are prevalent on all the islets (motu) along the reef.
Key sectors, issues and vulnerabilities	Water – of the 71 households, all have own water tank and six has access to a public water catchment. Total storage capacity 1.37m litres households/hospital and 0.37m litres community tanks. Drought every 5 years with reduced water supply (rain). Changes in rainfall patterns threaten the availability of water in general for drinking and bathing. Economic – Pearl production is leading economic activity with fishing mainly for local consumption. The number of seeded oysters has remained relatively low with 10 active farmers and 14 marginal farmers. Number of saleable pearls has increased from 5,300 in 2011 to 37,200 in 2014 (latest data year). Compliance with the Manihiki lagoon management plan (to improve environmental management and farming practices) is contributing to the improved quality of pearl production. Brush fire every 6 to 10 years destroys fern land with planted trees while coastal fires are frequent. There is no known information about tsunami risk. Agriculture - Coconut grows well and the main source of land-based food. Increasing the production of other agricultural crops in Manihiki is however hindered by the quality of soil. Major cyclone (category 3, 4, 5) every 10 years with worst affected areas low lying areas along coast and taro plantations. It is noted that droughts occur generally every 5 years with taro plantations drying up.
Development interventions to-date	Water Security – The Northern Water Project will improve Rain Water Harvesting and storage by repairing and restoring community water tanks on Pukapuka, Nassau, Penrhyn, Manihiki and Rakahanga. This will provide an additional 2.5 million litres of water to the communities and improve water security for the northern islands, enhancing their resilience to natural disasters and strengthen their disaster management capabilities. SRIC funded water project to increase

	storage capacity.
	Economic Resilience – There are government and development partner programmes for the pearl industry though significant returns remain to be seen. Government has allocated funds for the construction of multi-purpose airport terminal (terminal services and aircraft fuel storage) to protect passengers and crew from the elements and for the efficient and safe operations of air services. The renewable energy project will provide financial sustainability to the Island Government provided tariffs are not reduced in the short term. In Tukao, energy demand is slightly above design load but recent reduction in power tariff will most likely induce higher demand and place higher reliance on the diesel generator. Tauhunu demand exceeded its design load by 24% creating additional strain to the battery bank which will result in earlier than projected replacement and the diesel generator used more often with fuel and maintenance costs likely to rise. SRIC funded pearl biologist, coconut virgin oil production project and boat trailers (safe transport of boats to harbour).
	Food Security - Manihiki is among a number of islands that had an increase in number of hydroponic and semi hydroponic, biological/organic, and aquaponic systems for the supply of salad products (lettuce, tomato, capsicums, herbs, spring onions, bok-choi). SRIC funded hydroponics project.
	Disaster response and risk management - Development of the Island Disaster Management Plan 2017 – 2019 with further support required if Goal 13 of the Cook Islands National Sustainable Development Plan (NSDP) **"Strengthen resilience to combat the impacts of climate change and natural disasters"** is to be achieved.
AF Focus	Water Security - Fare Vai (community water tanks)

Rakahanga

Population	(2016) Resident Population 82, 51% female; 25 Households
Land/lagoon area and use	1,248 km north of Rarotonga Land Area: 4.1 km^2 Lagoon: 13 km^2 Length of Reef: 13 km
	The island is a raised coral atoll located close to the island of Manihiki. The atoll is a green turtle nesting site and has a shallow, almost landlocked lagoon. The lagoon appears semi-stagnant due in part to its landlocked nature. No ship passage enters the lagoon, and the flats between motus are shallow. Atoll soil is poor; vegetation consists mainly of coconut palms, pandanus, and a few breadfruit trees. Indigenous trees such as ngangie and toa are prevalent on all the islets. Ancient taro swamps are the main source of root crops. Coconut remains an important food crop for the island community.
Key sectors, issues and vulnerabilities	Of the 25 households, 24 have their own tank and five households access the public water catchment. Total storage capacity is 0.30m litres for households and 0.23m litres for community tanks. Rainwater is the principal source of drinking water for Rakahanga, which is stored in community and privately owned plastic tank reservoirs. Of 9 community water tanks, only one is working properly while the rest require minor repairs. Once repaired, the community will have storage capacity of approximately 420,000 litres of water available for community use. Changes in rainfall patterns risks the availability of water in general for drinking and bathing Economic – Rakahanga has a very productive fisheries sector. This need to be developed to provide food security as well as in creating alternative revenue stream for the island community, which may include; harvesting of ocean and lagoon fisheries for the market in Rarotonga. Sea level rise and storm surge threatens traditional livelihood with loss of access to fishing areas. Agriculture/food security - The recent increase in the use of young coconut sprout as an organic drink presents an opportunity for the high value organic drink markets. Changes/variations and increase in local and national temperatures regimes will impact on ecosystems (marine, terrestrial and aquatic) – corals, food productivity, planting areas.
Development interventions to-date	Water Security – The Northern Water Project will improve Rain Water Harvesting and storage by repairing and restoring community water tanks on Pukapuka, Nassau, Penrhyn, Manihiki and Rakahanga. This will provide an additional 2.5 million litres of water to the communities and improve water security for the northern islands, enhancing their resilience to natural disasters and strengthen their disaster

	management capabilities. SRIC also funded water project that will increase storage capacity by 0.2 million.
	Economic Resilience – The recently completed renewable energy system represents an important opportunity for financial sustainability if the Island Government retains a sensible level of tariffs. The availability of regular power may lead to better use of Rakahanga's fishing resources through freezing or improved drying techniques. However, energy demand is running higher than design load increasing stress on the battery bank and resulting in higher than planned diesel generator operation which unless managed is likely to result in systems outages, early battery replacement and increasing fuel costs. SRIC funded causeway project and outboard motors.
	Food Security – SRIC funded taro growers project and drainage works for better environment to grow taro and breeding of some fish species..
	Disaster response and risk management – Cyclone Centre construction for Rakahanga (2017/18). Development of the Island Disaster Management Plan 2017 – 2019 with further support required if Goal 13 of the Cook Islands National Sustainable Development Plan (NSDP) **"Strengthen resilience to combat the impacts of climate change and natural disasters"** is to be achieved.
AF Focus	Food security projects – Hydroponics, fencing animals Economic resilience - Coconut Oil

Penrhyn

Population	(2016) Resident Population 226, 46% female; 46 Households
Land/lagoon area and use	1,365 km north of Rarotonga Land Area: 9.8 km^2 Lagoon: 233 km^2 Length of Reef: 59 km
	Penrhyn is the most remote and largest atoll in the Cook Islands with Rarotonga fitting over three times into the lagoon area (the largest lagoon in the South Pacific). The large lagoon area constitutes a crucial marine resource. Penrhyn is notable for its green and hawksbill turtle nesting sites and natural stocks of blacklip pearl oyster. There is no land suitable for either annual or tree crops. Soil is infertile, consisting mainly of coral debris, fragmented shells and silty limestone. Moisture retention is poor. Coconut palms, pandanus, and breadfruit trees are the main vegetation. Indigenous trees such as ngangie and toa are prevalent on all the islets.
Key sectors, issues and vulnerabilities	46 households have 12,000 litres of water storage and 13 households access the public water catchment. Total storage capacity is 0.57m litres for households and 0.35m litres for community tanks. There is a need for island-wide maintenance programs (community meetings/home visits for annual clearing of spouting and roofs, connectors maintenance). Changes in rainfall patterns and more severe weather risks the availability/quality of water for drinking and bathing while sea level rise and storm surge risks damage to coastal infrastructure (e.g. community water tanks). Economic – The main fishing grounds of the country are from Penrhyn in the east to Pukapuka in the west, and north of Suwarrow. Harvesting natural pearls (pipi) on Penrhyn has been a main source of income with two overseas buyers working directly with the community. A recent Marine Resource Assessment (2015) has confirmed the significant number of pipi oyster in the island lagoon. However, climate change and sea temperature warming continues to challenge this resource. Handicraft production has also contributed significantly to household income. More severe weather events poses increased incidence of loss and damage to ships and fishing boats while sea level rise and storm surge risks loss of access to fishing areas. Agriculture/food security - More severe weather events increases risk of loss and damage to agricultural infrastructure and crops affecting food security.

Development interventions to-date	Water Security – The Northern Water Project will improve Rain Water Harvesting and storage by repairing and restoring community water tanks on Pukapuka, Nassau, Penrhyn, Manihiki and Rakahanga. This will provide an additional 2.5 million litres of water to the communities and improve water security for the northern islands, enhancing their resilience to natural disasters and strengthen their disaster management capabilities.
	Economic Resilience – Penrhyn has elected to come under the coverage of the National Environment Service Act where an environment officer will be based on the island to maintain important environmental activities and carry out the functions of the Environment Act. Penrhyn has benefitted from major infrastructure works in the renewable energy and fuel depot construction, and coastal protection efforts in Te Tautua. The renewable energy system will provide 24 hour freezing capability to complement fishing activities. Nominally, energy demand exceeded demand design load by 60% but accuracy of load data needs further monitoring.
	Food Security – SRIC initiated fishing and hydroponic (for high salinity atoll village) project.
	Disaster response and risk management – Repairing Omoka Harbour pilings in 2016/17 is a transitional measure to address marine safety to the communities at both Omoka and Te Tautua. SRIC funded Pitaka coastal protection project (planting of native trees). Disaster response and risk management - Development of the Island Disaster Management Plan 2017 – 2019 with further support required if Goal 13 of the Cook Islands National Sustainable Development Plan (NSDP) **"Strengthen resilience to combat the impacts of climate change and natural disasters"** is to be achieved.
AF Focus	Food security projects – Hydroponics 1x Omoka and 1x for Tetautua Economic resilience - Boat repairing equipment, housing of equipment and training (106 boats on the island)

Aitutaki

Population	2016 Resident Population 1700 50% female; 502 Households
Land/lagoon area and use	277 km north of Rarotonga Land Area: 18.1 km2 Lagoon Area: 66 km2 Length of Reef: 43 km
	It is a raised volcanic island surrounded by a barrier reef and is the second most visited island in the Cook Islands. 52% of island suitable for annual and tree crops (banana, mango, and coconut), additional 26% is suitable for tree crops The encircling reef is over 40 kilometers long and is studded with 15 additional islets (motu). Aitutaki rises to about 121 meters above sea level at its highest point¯Maungapu. Aside from the latter hill, the island consists of flat-topped terraces and fertile planting areas and fairly extensive areas of coral. The lagoon is 66 sq km and has an average depth of about 5 meters. There is no deep-water passage into the lagoon.
Key sectors, issues and vulnerabilities	Water (469 dwellings connected to public water main; 466 have rainwater tank; 45 use public water catchments; despite a recent upgrading of the water supply for the island, this falls short of consumption requirements; all major new commercial users are required to install rainwater collection tanks or desalination systems, and households are encouraged to install private water tanks). This represents approx. 3.8m litres of residential tank storage and 195,000 litres of community tank storage. Economic - Tourism (leading development sector; approx. 28,824 visitors (2015) not including the day trippers; tourism must be managed to ensure it remains economically viable, socially acceptable and environmentally sustainable) Preservation of the beauty of the lagoon is a high priority as the tourism industry grows. Areas of the lagoon are now under “Raui” (a traditional conservation method) where marine activities are not permitted for given periods. This is to assist the re- establishment of the native clam population as well as reef fish. The islets are also breeding grounds for the lorikeet. Agriculture - most of the households produce exclusively for home consumption, while some supplemented subsistence production with cash cropping; production is vulnerable to drought, cyclone damage and pests and diseases. Over 50% of households raise livestock

	especially pigs for subsistence and special occasions.
Development interventions to-date	Water Security – 2016 Government committed to a two-year program of establishing further water galleries to provide water to those households without regular supply in 2016/17 and 2017/18.
	Economic Resilience – Aitutaki has a balanced tourism source market with NZ representing approx. 30% of the total with Australian visitors at 26%. The remainder is a combination of long haul markets from US, Canada, Europe and Asia. Waste Management remains a key issue for the island. Street lighting will increase safety and security for motorists and pedestrians alike.
	Food Security – Agriculture programmes have further enhanced agriculture outputs including addressing water needs for farms.
	Disaster response and risk management - Development of the Island Disaster Management Plan 2017 – 2019 with further support required if Goal 13 of the Cook Islands National Sustainable Development Plan (NSDP) **"Strengthen resilience to combat the impacts of climate change and natural disasters"** is to be achieved.
AF Focus	Water Security, ongoing requirements in securing and protecting the underground water resources and ensuring waste management issues are dealt with
	Economic Resilience should include Coconut Virgin Oil programmes and coastline protection with further tree planting.
	Food Security, lagoon master plan a high priority to protect the tourism assets of the island – Shelter and caretaker for Manuae Island will be funded under the R2R project.
	Others: Renewable Energy programme to be implemented in 2018/19 proposes a 1000 Kw solar PV array, new 300kW high speed diesel diesel generator in existing power house, containerised battery storage system plus upgrade of switchgear and control to cover its electricity needs and to reduce diesel fuel and non-renewable sources dependence.

Atiu

Population	**2016 Resident Population 427** **52% female** **131 Households**
Land/lagoon area and use	Distance to Rarotonga: 215 km Land Area: 26.9 **km²** Lagoon: Nil Length of Reef: 21 km
	Enua Manu is the traditional name for Atiu and translates as “land of birds”. The island is a raised coral islands surrounded by steep makatea cliffs that rise between 3 and 6 meters above sea level. Red volcanic inland soils are heavily wooded, with rolling hills rising to 72 meters above sea level. Valleys run east and west, and settlements are located on a plateau surrounded by swamps and a small lake. The narrow, fringing reef drops steeply to the ocean floor 4,500 meters below. Atiu is know as the “land of the birds” Enuamanu. The limestone cliffs, caves and swamplands are important environmental features. Makatea wildlife such as the Atiu kopeka (swiftlet) bird, Rupe (Pacific Pidgeon), Kura (lorikeet) are common in particular areas. The main settlement is concentrated within the centre of the island.
Key sectors, issues and vulnerabilities	**Water –** 130 households have onsite water tanks which are currently the main source of water for residents. 46 households use public water catchment. This represents 1.8m litres of residential tank storage and 1.7m litres of community tank storage. Water mains project has commenced where water mains are being installed alongside the power distribution cables in the village areas. Last water shortage was experienced in 2011 when household water tanks was insufficient and water was sourced from community and school water tanks.
	Economic – Tourism is a small but potentially transformative industry, but remains a distant second to Aitutaki in terms of arrivals. Tourism numbers were approx. 2,450 in 2015. Airport runway is in a deteriorated condition with the potential of closure. There are areas of rich flora and fauna, which has been reserved for ecotourism, with tourism walking and sight-seeing tracks and caves to explore. Resources for Arts and crafts are at risk. These coastal resources are picked and used by the women and children to adorn costumes and natural medicines however they are at risk of disappearing with the impacts of climate change. Fishing (over 80% of all households are involved in fishing, mostly for home consumption only; the bulk of fishing activity occurs inside and on the reef, but an increase in the number of outboard motors has permitted access to the sea beyond the reef, so that trolling and deep bottom fishing have increased)
	Agriculture – Local agriculture remains the dominant industry comprising mainly taro. This is the staple food for 95% of the island population and the taro plantations are found on the interior of the island. Any excess taro in the local market is exported

	to Rarotonga and sometimes sliced and frozen ready for expert to New Zealand. Atiu is known for Atiu Coffee, which has been successful marketed and sold as far away as Europe. Domestic livestock includes pigs and goats with a number of wild pigs that have caused destruction to farms. Initiatives to procure and install wire fencing to protect farms have commenced.
Development interventions to-date	**Water Security** was further enhanced with investments in domestic and community water tanks and upgrading of the Maramou well.
	Economic Resilience was supported with investments in coconut oil production as well as supporting locally produced value add products.
	Food Security included the provision of community fishing boats and trailers to ensure the diet of the community is improved with fish (a low-fat high quality protein) being more readily available.
	Disaster response and risk management - Development of the Island Disaster Management Plan 2017 – 2019 with further support required if Goal 13 of the Cook Islands National Sustainable Development Plan (NSDP) **"Strengthen resilience to combat the impacts of climate change and natural disasters"** is to be achieved
AF Focus	Water Security, ongoing requirements for maintenance and managing the current resources effectively.
	Economic Resilience should include Coconut Virgin Oil programmes and expanding the replanting of coconut trees that will further support increased requirements of the virgin oil programme.
	Food Security – agricultural support for orchard farming and young farmers programme
	Others – The renewable energy programme will see in 2017/18 the installation of 399 kW solar power plant with gel-acid battery storage plus power station upgrade with advanced control system connected to distribution system to cover its electricity needs and to reduce diesel fuel and non-renewable sources dependence.

Mangaia

Population	2016 Resident Population 494 49% Female 157 Households
Land/lagoon area and use	Distance from Rarotonga: 204 km Land: 51.8 **km²** Lagoon: There is no lagoon Length of Reef: 27 km
	It is the southern most islands of the Cook Islands and the second largest island. It has the distinction of being the oldest island in the Pacific that is roughly circular in shape. Mangaia consists of a low central plateau, which is separated from the completely encircling platform of makatea by a series of irregular swampy depressions. It has a central volcanic plateau, and is surrounded by a 200-foot (60 m) high ring of cliffs of fossilised coral, *called makatea*. These limestone battlements are honeycombed with caves featuring stalactites and stalagmites of extraordinary beauty. The largest and most spectacular cave is Teruarere. The Mangaia Kingfisher (Todiramphus ruficollaris) is found nowhere else in the world, and it's name is totally misleading. It never eats fish but preys instead on skinks, insects and spiders. The colourful bird lives high up in the forest growing on the makatea. Birdlife International says there are between 400 and 700 birds on the island, but because they're unique to Mangaia, they're classified as an endangered species. The geographical uniqueness of Mangaia relative to the rest of the Pa Enua suggest that there is also potential to improve tourism development activities that could include Tanga'eo Kingfisher, fish feeding, cave and scenery lookouts. Mangaia is poorly endowed with land by Southern Group standards; nonetheless, agriculture is the principal productive sector in the island economy; Most households are in agricultural activity of some kind; most households produce exclusively for home consumption, but a substantial number supplement subsistence production with cash cropping; the main crops are avocado, banana, breadfruit, chestnut, coconut, mango, taro, and tarua; home gardens are mainly the responsibility of the women to plant, maintain, and harvest; to a certain extent, women are still associated with the cultivation of the very high-quality swamp taro;
Key sectors, issues and vulnerabilities	Water 153 households are connected to the public water main; 6 access public water catchments and 153 have their own rainwater tanks. This represents 2.1m litres of residential tank storage and 450,000 litres of community tank storage. Mangaia is renowned for its shell neckbands or "eis". These are made from the shells of the tiny yellow snail, the pupu, which emerges only after rain. Gathering, piercing and stringing is a very time consuming business. The women of the island often give the highly prized strands away as gifts of friendship to visitors from other islands in the group. Mangaia is also renowned for its coconuts. The people of the island have long considered them a staple plant of survival. They remain an important crop even

	today, providing food, coconut milk, and also fiber. The introduction of climate-resilient crop varieties and related farming techniques will also contribute to the reintroduction of culturally significant varieties affected by past extreme climatic events, and to the diversification of crops and related food products. Fish storage methods will be improved. These actions will enhance food security under changing climatic conditions. Health support and vector-borne disease control techniques will be introduced in an integrated way, combining enhanced prevention, control and response measures, supplemented by enhanced water safety and food security measures. Specific actions will include expanding the use of vector-borne disease control techniques and vector control with a focus on prevention activities through health education and awareness, strengthening community cleanup programmes to control areas of stagnant water, encouraging balanced nutrition and food storage, encouraging increased drinking of fluids in order to avoid dehydration, including the use of traditional sources of fluid, such as coconut, increasing response by health staff to diagnose and treat climate-related illnesses, and modifying cultural and behavioural practices in order to reduce stress in hot weather, and to counteract the health effects of poor water quality, including filtration and boiling of water at critical times when there is poor water quality.
Development interventions to-date	Water Security investments in water storage in Ivirua village, which continues to have limited water supply for household needs. As well Tamarua Community hall has had its roof repaired to ensure rainwater harvesting from the roof to the community tank is effective.
	Economic Resilience – Eco tourism activities have been ongoing in the southern group islands that include working with senior school students as well as signage boards for cultural heritage and tourism sites. The signage also will ensure that the sites will support the importance of safeguarding wetlands, coastal areas, traditional sites and its surrounding environment.
	Food Security – projects to increase a variety of vegetables on Mangaia for local consumption as well as exporting surplus produce for sale on Rarotonga. The Young Farmers project has put aside the need to import fresh produce. It also means increasing employment and economic opportunities for the community.
	Disaster response and risk management - Development of the Island Disaster Management Plan 2017 – 2019 with further support required if Goal 13 of the Cook Islands National Sustainable Development Plan (NSDP) “Strengthen resilience to combat the impacts of climate change and natural disasters” is to be achieved
AF Focus	Water Security, ongoing requirements for maintenance and managing the current resources and investments effectively especially ensuring that farmers have access to water.
	Economic Resilience should include further development of the nursery programme as well as expanding the replanting of coconut trees and pandanus trees for crafts.
	Food Security – agricultural support for orchard farming and young farmers programme
	Other - The renewable energy programme will see in 2017/18 the installation of 462 kW solar power plant with gel-acid battery storage plus new control system for the power station to cover its electricity needs and to reduce diesel fuel and non-renewable sources dependence.

Mauke

Population	**2016 Resident Population 494** **49% Female** **97 Households**
Land/lagoon area and use	Distance from Rarotonga: 278 km Land: 18.4 **km²** Lagoon: Nil Length of Reef: 17 km
	Mauke is half the size of Rarotonga in circumfrence (18 kms, 11.25 miles), but it's a world away in landscape and lifestyle. Its central volcanic plateau is surrounded by ring of jagged, razor-sharp fossilised coral or makatea which reaches up to 1,000 metres inland. But the volcanic origins mean the soil is rich and this is justifiably called the garden of the islands. Deep underground caves and lakes honeycomb the island. Even the islanders haven't explored them all. And a dip in the cool, crystal clear water is a treat. The centre of the island is dominated by a large white church with two separate concrete paths and two entrance archways. One is for the village of Ngatiarua and the other for the neighbouring village of Areroa. Neither could agree on the design of the interior, with the result that a wall was built across the middle of the church cutting it into two squares. Each village then completed its side to its own design. Hidden deep in the interior of the island is world's largest banyan tree. It's thought to cover more than a quarter of an acre - some say a full acre - and it's still spreading.
Key sectors, issues and vulnerabilities	96 households are connected to the public water main with one connected to the public catchment. 32 households have water tanks. This represents 646,000 litres of residential tank storage and 192,000 litres of community tank storage. The 2016/17 Budget noted that despite the availability of ground water supply for irrigation purposes the 2013 drought affected the production of vegetable earmarked for Rarotonga Prime Foods supermarket. Recently constructed harbour at Taunganui is expected to provide improved cargo handling and shipping services on the island and the draft agricultural plan for the island holds some promise for future development. The rich soils of Mauke's inland are well suited to agriculture, with a diverse range of vegetable, root and fruit crops grown. In the past years fruits especially oranges were exported to Rarotonga for juicing. The islands also use to raise cattle for commercial production but today farming on Mauke is mainly done for subsistence and for local consumption. There is also a small but persistent semi-commercial group of growers that fill the local shops or the island's main and village markets. The main foreign exchange earner for the country has been the niche market in

	Hawai'i for maire exports; a leafy plant harvested by local women from the jagged makatea, and processed by hand into garlands used to make leis. There is a very modest tourism sector in Mauke, comprised of small budget accommodation with generally low occupancy rates.
Development interventions to-date	Economic Resilience was supported with investments in coconut oil production that will provide economic opportunities particularly for women and the community generally. This project is supported by the coconut tree-banding programme, which protects the coconut trees from pests and rats and ensures regular supply of coconuts for oil production.
	Food Security included the provision of community fishing boats and trailers to ensure the diet of the community is improved with fish (a low-fat high quality protein) being more readily available. The Sawmill project includes the provision of machinery and equipment, which will remove the invasive acacia plants on the island and thereby protect native plants and water resources.
	Disaster response and risk management - Development of the Island Disaster Management Plan 2017 – 2019 with further support required if Goal 13 of the Cook Islands National Sustainable Development Plan (NSDP) "Strengthen resilience to combat the impacts of climate change and natural disasters" is to be achieved
AF Focus	Water security, ongoing requirements for maintenance and managing the current resources and investments effectively especially ensuring that farmers has storage for stale water that can be used for agricultural purposes.
	Economic resilience should include further development of the nursery programme as well as expanding the replanting of coconut trees and expanding the young farmers for tomorrow.
	Food security – further agricultural support for orchard farming and young farmers programme
	Other - The renewable energy programme will see in 2017/18 the installation of 228 kW solar power plant with gel-acid battery storage plus new power station with diesel generators and new control system plus upgrade of existing distribution system to cover its electricity needs and to reduce diesel fuel and non-renewable sources dependence.

Mitiaro

Population	**2016 Resident Population 494** **49% Female** **52 Dwellings**
Land/lagoon area and use	Distance from Rarotonga: 263 km Land: 22.3 **km²** Lagoon: Nil Length of Reef: 18 km
	Mitiaro is a low-lying (15 meter) island with a Makatea coral fringe and a central peat swamp and brackish water lake. It is the fourth largest island in the Cook Islands, being about 6.5 km long and 4.5 km wide, with a land area of 2,230 hectares. The island's interior, made up of fertile volcanic soil, is ringed by swamps and limestone. It also has underground limestone caves and pools that supply fresh water. The centre of the island is almost flat and is quite swampy; it contains two freshwater lakes, Rotonui and Rotoiti ("Big Lake" and "Small Lake," respectively), that teem with eels (*itiki*) and tilapia, the latter of which were originally imported from Africa and are known locally as bream. Mitiaro is poorly endowed with agricultural land; There is relatively little fertile soil on the island: only 5% of the land is suitable for annual crop cultivation and 41% for tree crops.
Key sectors, issues and vulnerabilities	49 households are connected to the public water main with 12 households connected to the public water catchment and 38 households have water tanks. This represents 64,000 of residential tank storage and 440,000 litres of community tank storage. Beaches are limited, but there are crystal clear pools in the subterranean limestone caves which are all over the island. Vai Marere is full of stalactites and caving experts say that if you swim in the dark pool at the bottom of this cave, the minerals in the water leave the body and hair feeling silky. Kikau huts are a traditional form of accommodation still found to this day particularly on the Northern group islands. But Mitiaro is bringing that basic type of home up to date and offering it as part of what the Tourism Authority are marketing as "an authentic cultural experience". The completion of the harbour upgrades at Omutu assists the local fishermen to safely launch their boats and offload their catch and ensuring full use of the two coastal fish aggregating devices. Upgrading of the local water gallery and reticulation system is underway during 2016/17 as well as reliable 24 hour electricity to the island expected to be completed by end of 2017.
Development interventions to-date	Water Security investments in water storage capacity in a community that continues to have limited clean water supply for household needs. Some households rely on carting water including brackish water for essential household needs.

	Economic Resilience was supported with investments in coconut oil production that will provide economic opportunities particularly for women and the community generally. Traditional crafts and carving projects will provide earning opportunities for women in particular and training and education of youth on how to make traditional crafts.
	Food Security included the provision of community fishing boats and trailers to ensure the diet of the community is improved with fish (a low-fat high quality protein) being more readily available. Other projects included egg and duck farming. Hydroponic farming has commenced to provide a variety of fresh produce for the local community and surplus for sale on Rarotonga.
	Disaster response and risk management **-** Development of the Island Disaster Management Plan 2017 – 2019 with further support required if Goal 13 of the Cook Islands National Sustainable Development Plan (NSDP) "Strengthen resilience to combat the impacts of climate change and natural disasters" is to be achieved
AF Focus	Water security, ongoing requirements for maintenance and managing the current resources and investments effectively with feasibility to access fresh water from the caves
	Economic resilience should include further development of the nursery programme as well as expanding the replanting of coconut trees and expanding the young farmers for tomorrow.
	Food security – further agricultural support for orchard farming and young farmers programme
	Other - The renewable energy programme will see in 2017/18 the installation of 157 kW solar power plant with gel-acid battery storage plus new power station with new diesel generators and new control system plus upgrade of existing distribution system to cover its electricity needs and to reduce diesel fuel and non-renewable sources dependence. The renewable energy programme will see in 2017/18 the installation of 399 kW solar power plant with gel-acid battery storage plus power station upgrade with advanced control system connected to distribution system to cover its electricity needs and to reduce diesel fuel and non-renewable sources dependence. The renewable energy programme will see in 2017/18 the installation of 399 kW solar power plant with gel-acid battery storage plus power station upgrade with advanced control system connected to distribution system to cover its electricity needs and to reduce diesel fuel and non-renewable sources dependence.

Annex 2: Gender Assessment Profile

I. Gender Overview

The total population of the Cook Islands officially tallied in the last census of 2016[1] stood at 14,895 people consisting of approx equal men and women.[2] The 2015 Pacific Regional MDG Tracking Report noted particular concerns of the women of the Cook Islands on NCD's and violence against women. Gender equality was particularly flagged by Cook islands, which found that women headed households are still more vulnerable to poverty and men still out number women in senior level positions and in full-time employment. In this context the report indicates that Cook Islands is one of two countries in the Pacific who have achieved gender equality and women's empowerment. There has been notable achievement of gender parity with more inclusive education, particularly for women and girls with disabilities. In comparison to other Pacific countries, they have the highest percentage of women in paid employment in the non- agricultural sector, which is above 50%[3] and this has now changed in 2016. Remaining gender inequalities such as, access to economic resources and increased participation in decision-making will require further attention in Cook Island society to lessen or eliminate those inequalities. Cook Islands acceded to the 'Convention on the elimination of all forms of discrimination against women' (CEDAW) in 2006 and has since made domestic commitments to achieving gender equality and advancing women, which include the government's 'National Policy on Gender Equality and Women's Empowerment' (GEWE) together with a 5 year strategic plan of action 2011-2016 currently under review, the Family Law Bill yet to be enacted; awareness and consultations underway. Since July 2014 elections, 4 of the 24 seats held by women with a female Speaker of the Hours (non-parliamentary member appointment). Increase in women's representation in top tier management in the public service – 6 out of 16 ministries are headed by women. The development of the Te Kaveinga Nui, the National Sustainable Development Plan (NSDP 2016 – 2020 has a renewed focus on measuring progress in a more holistic manner. It has defined sixteen specific goals and Goal 9 intends to accelerate gender equality, empower all women and girls and advance the risghts of you, the elderly and disabled. In particular the, indicator 9.3 will advance gender equality in the workplace where gender inequality still occurs.

II. Gender Relations

Work and Employment: Similar to other Pacific island countries, the labour market in the outer islands of Cook Islands is limited with a reliance on subsistence livelihood activities notably in agriculture and fisheries. However on the main island of Rarotonga where a majority of the population resides, women's share of wage employment in the non-subsistence sector (industry & services) with regular wages or salaries is relatively high at 47%.[4] These figures confirm that more women are becoming self-employed and create businesses dealing in tourism, retail, arts and other enterprises. This has been attributed to a land succession system whereby women can claim customary land (in most cases) and better access to credit. The 2011 census however shows that a significant gender difference remains in earnings for paid employment and preliminary results of the 2016 Census that the gap has been reduced. In this context more women than men were in the lowest income bracket and more men than women were in the highest earning groups. Pay disparities thus

[1] Preliminary estimates 2016 Census Results (April 2017) provided by Ministry of Finance and Economic Management, Statistics Division

[2] http://www.mfem.gov.ck/statistics/census-and-surveys/census/143-census-2011.

[3] Pacific Regional MDG Tracking Report 2013, Pacific Islands Forum Secretariat

[4] ADB Gender Statistics -The Pacific and Timore-Leste 2016, Manila

still exist and employment rights issues remain a challenge with emerging civil cases on sexual harassment and protection from unfair dismissal.

National Mechanisms: Cook Islands having ratified CEDAW in 2006, also endorsed the GEWE and the Plan of Action 2011-2016, which also established the Gender and Development Division (GADD) under the Ministry of Internal Affairs as the official national women's machinery entrusted with the coordination of mainstreaming implementation of the GEWE. The GEWE recognizes that women and men are equal partners in the development of the Cook Islands, and places gender equality at the heart of economic and social progress. Furthermore, the national policy emphasizes that in order to redress gender inequalities it is necessary to create the conditions for women's empowerment while women and men work together to address attitudinal and institutional barriers. This was integral to the formation of the CEDAW Law Reform programme that began in 2008 with revisions noted to a number of acts recommended, notably the Marriage Act and the Crimes Act.[5] However progress has been slow in presenting the amendments to Parliament evident in the recent tabling of the Family Law Bill in 2015 since its inception in 2010. Success however has been achieved on other fronts such as the enactment of the Employment Relations Act 2012, which provides maternity leave benefits for women in the private sector and includes provisions for the prevention of sexual harassment and protection from discrimination based on gender and pregnancy.[6]

Women's Participation in Decision-Making: The Cook Islands has made progress in increasing women's representation and political participation in comparison to its Pacific island neighbours whereby at the national level, the percentage of women in parliament is highest at 4 out of 24 seats. It is also the highest with women in management roles at 48% with managerial positions including senior government officials, corporate and general manager positions. At the local level, numerous initiatives provide capacity building and support for women candidates in island council elections such as the Cook Islands National Council of Women (CINCW) whom provide individual mentoring for women candidates in island council elections. Women however continue to face a number of challenges when standing for election, such as financial resources and weak social capital in addition to ingrained beliefs that decision making and politics is a domain for men only. There are currently no political reform discussions to introduce temporary special measures such as reserved seats for women elected officials in parliament.[7] Gender mainstreaming training at parliamentary level is being planned and to establish a network of gender focal points in each Government Department. Gender mainstreaming into public decision making and policy analysis remains a challenge and therefore requires gender responsiveness into government policies and programmes as identified in the National Policy on Gender Equity and Women's Empowerment.

III. Sector Gender Issues that are relevant to this proposal

Economic Development: The *Te Kaveinga Nui: Living the Cook Islands Vision - A 2020 Challenge* includes the Cook Islands National Sustainable Development Plan which is now into its third edition covering 2016-2020 (NSDP 3). It essentially sets out national development priorities with a multi-sector focus. It emphasizes the need to focus on providing equal opportunities in all sectors including social services (gender is included in social services). The 2012 gender mainstreaming stocktake exercise by SPC [8] reveals that gender issues however remain rarely discussed as a development issue and gender equality

[5] Cook Islands Gender Equality Policy Analysis: Implementing the National Gender Equality Policy in the Cook Islands 2015, Cook Islands Gender Equality and Women's Empowerment Project 2014-15, Rongokea L.F.

[6] Gender Equality: Where We Stand? , PGEP Initiative, SPC;

[7] Cook Islands National Policy on Gender Equality and Women's Empowerment, Strategic Plan of Action 2011-2016.

[8] SPC 2012 Stocktake of the Gender Mainstreaming Capacity of Pacific Island Governments - Cook Islands

is not ideally mainstreamed across all sectors. With the exception of the Education and Health sectors, there is little production and use of sex disaggregated data and gender analysis for guiding policy making, programs design and service delivery. There is no accountability system for mainstreaming gender at the institutional and individual levels. The technical capacity to conduct gender analysis and mainstream gender is generally low in all sectors. The coordination of initiatives for addressing women's human rights is weak and collaboration with the national women machinery is very limited. The financial and human resources for mainstreaming gender remain largely insufficient.

Education: According to the 2015 Regional MDG Tracking Report gender parity in education has been achieved with more girls attending secondary school with progress in the area of inclusive education, particularly for women and girls with disabilities. In relation to post-school qualifications, the national education management information system (EMIS) show that women occupy the majority of university places in the Cook Islands (74% of tertiary students).[9] The Cook Islands however follow the global trend in which women continue to dominate traditionally 'feminine' fields of study and are underrepresented in technical and trade-related fields (such as construction, mechanical and electrical). Women continue to dominate in fields linked to social reproduction — education, health and welfare, humanities and arts, social science, business and law. Education for women and girls is a high priority for the Government with more work needed to translate educational attainment into career achievement. The major challenge is changing the mind-sets of the general community, key sectors and service provides with future plans to develop gender sensitive curriculum.

Health, and Sexual and Reproductive Health: The overall health indicators have improved considerably in the last decades. Health care services are more accessible and the quality of care is better. The country has made great strides in reducing the maternal mortality ratio and infant mortality rate, and the reproductive health standards are good. The Cook Islands is among the few Pacific Island countries and territories taking proactive measures to ensure that teenage mothers are able to continue their education and have access to youth-friendly reproductive health services. According to the 2011 Census, women live, on average, six years longer than men, with a life expectancy at birth of 78 years. However, the adolescent fertility rate is as high as 68 births for 1000 women among women aged between 15 to 19 years.[10] In addition, the consistent prevalence of sexually transmitted infections (STIs) among younger men and women, which reaches up to 46 per cent, is a matter of concern. A current policy requires a husband's authorization if his wife wants sterilization. Abortion is still illegal, unless the life of the mother is threatened or if the pregnancy is the result of rape or incest. These policies are violations of women's reproductive rights.

Other health issues, such as non-communicable diseases (NCDs), are becoming serious issues affecting women's health. NCDs account for over 75% of all cases in the health system. From 2006-2012, six out of every 10 new cancer cases were women.[11] Besides their vulnerability to those diseases and conditions, women are usually the ones providing care for ill family members — this burden is rarely acknowledged with an increasing proportion of the population aged above 65 years, due to fewer babies being born and increasing emigration. The Cook Islands is experiencing the phenomena of an 'ageing population', and the country must ensure that older persons have access to appropriate health care services, are economically secure, and that they have appropriate access to in-home care from either family members, the community or other care providers.

[9] Opt. cit. fn3

[10] Opt. cit. fn7

[11] Opt. cit. fn3

Water and Sanitation: Challenges in the water sector relate to the geographical dispersion and the consequent high cost of providing services to the outer islands, and the general shortage of appropriate qualified staff in the sector. Where water resources are scarcer as in the outer islands, people are more inclined to conserve water. Gender plays an intricate role in the management of water resources and decisions made with regards to water impact men and women differently. For these reasons gender must be taken into account to give a balanced and equitable output.

Gender-based Violence: Research conducted by the CINCW in 2013 has produced the first comprehensive data about violence against women in the Cook Islands. This research shows that one in three women has experienced physical and/or sexual violence by their partner at some point in their lives.[12] A further comprehensive study was launched in 2014 providing the first ever in-depth study on family violence. A formal referral mechanism to support services for victims involving the police, health, justice system and the Child and Family Unit has been developed and is currently being trialed. Increased funding allocated to NGO's through the Australian Government Pacific Women Shaping Pacific Development Initiative to provide legal services for women seeking protection from domestic violence. Family Law Bill yet to be enacted, has awareness programmes, training and consultations underway: led by Parliamentary Select Committee. The Bill will provide increased protection orders for families. The Family Law Bill, contains a number of measures aimed at preventing violence against women and domestic violence, and aims to establish services to comprehensively address the social, economic and legal needs of women and children affected by various forms of violence. The Punanga Tauturu Inc (PTI) is an NGO that is in the forefront of addressing the issue. The Cook Islands Police, supported by development partners, has set up a Domestic Violence Unit in response to the increasing incidence. Also in place is a 'No Drop Policy', where offenders will still be processed through the court system even if the partner wishes to withdraw the charge.

Civil Society Partnerships: The role of civil society organizations (CSO's)such as the Cook Islands National Council of Women (CINCW) and other actors have proved invaluable to the work on gender equality and women's empowerment in the Cook Islands and have raised a level of consciousness of gender issues across all of Government. Although not fully institutionalized, some Government departments have taken steps to address gender issues within their sectors by linking with CSO's. Other active CSO's include the Punanga Tauturu Inc (PTI) and the Cook Islands Association of NGO's (CIANGO). The introduction of the government's Social Impact Fund for NGOs provides funding opportunities for these CSO's working towards gender equality, youth participation and disability issues. CSO's also fundamentally play a role in monitoring the country's progress towards achieving gender equality, and coordinating some of the activities of the various entities responsible for the successful implementation of the GEWE.

Gender Mainstreaming

The gender mainstreaming approach for the project will therefore be focused on maximizing women's skilled and semi-skilled employment during implementation of the project, ensuring women's active participation and engagement during consultations, trainings and awareness programs.

A Gender Action Plan will be prepared during Inception to outline proposed activities and targets in line with the gender mainstreaming approach and maximize benefits to both men and women during project implementation and an outline is attached.

[12] Cook Islands National Council of Women, 2014 Te Ata O Te Ngakau. The Cook Islands Family Health and Safety Study, 2012-2013.

The Project's GAP will be implemented by the NIE Unit and PMU which will contract a social Gender specialist in the Project team. The specialist will be responsible for incorporating the GAP into project planning and program, including awareness workshops and establishment of gender-disaggregated indicators for project performance and monitoring. The NIE Unit and PMU will include reporting on progress of GAP activities in quarterly progress reports to the NIE.

Annex 3: Presentation of draft programme components

Climate Change and Disaster Risk Management Platform workshop
(9 June 2017, New Hope Church Hall, Rarotonga)

UPGRADE OF SCRIC

Teresa Manarangi-Trott
Michael Yap
Teariki Rongo

Work to date

- Review NSDP and JNAP
  - Priority areas
  - Relationship with overall Government Priorities
- Review CSDP for each island and related Plans
  - Priority areas related Strategic areas identified in JNAP
  - Other priority areas
- Review Current SRIC Project
  - Project components and what has been completed to date
  - Financial data
  - Upgrade of possible SRIC projects
    - Met Service
    - DRM
    - Water

Mayor and Island Council Consultations

Island	Are you aware of SRIC Programme?	Projects (completed and ongoing)?	Projects part of the priorities of your island?	Areas of focus for SRIC Upgrade
Aitutaki	Yes		Yes	Coconut Virgin Oil Coastline protection (tree planting) Lagoon Master Plan Shelter and caretaker for Manuae
Mauke	Yes		Yes	Community Water Tanks Roads to planting lands Water Tank to store stale water for growers Young farmers for tomorrow project
Mitiaro	Yes		Yes	Fresh water Supply from caves
Mangaia	Yes	Mangaia Fishing Association Project (marine) completed Tamarua Fishing Association (marine) completed Ivirua Water Tanks Project	Yes	Young Farmers for tomorrow project Water Supply for farmers and for human consumption Work on projects that will bring the people of each Puna together
Atiu	Yes		Yes	Food security Replanting of coconut Support coconut oil (dwarf variety) Improve Water sources (maintenance)

Mayor and Island Council Consultations

Island	Are you aware of SRIC Programme?	Projects (completed and ongoing)?	Projects part of the priorities of your island?	Areas of focus for SRIC Upgrade
Rakahanga	Yes		Yes	Hydroponics Coconut Oil Fencing our wandering animals
Manihiki	Yes		Yes	Tare Vai (Community Water Tanks), 3 for Tauhunu and 3 for Tukao Focus on home gardening, and fencing for puraka and taro planting areas Improving lagoon jetties
Penrhyn	Yes		Yes	Hydroponics 1x Omoka and 1x for Tetautua) Boat repairing equipment, housing of equipment and training (106 boats on the island)
Pukapuka	Yes		Yes	Coastal protection - Sea wall Small home gardening Self-development Mould for cement water tank
Palmerston	Yes		Yes	Food security projects Small grants for small development projects

SRIC II Budget

Budget allocation ceiling

	USD	% of total
Project components	2,502,300	
Executing agency costs	262,672	9.5%
Total budget requested	2,764,972	
Implementing entity costs	235,023	8.5%
Total grant	**2,999,995**	

Identification Process

SRIC II Component Options

The options were built on resilience gaps identified:

- Emergency Management
- Water Security
- Food Security
- Economic Resilience
- Project Management

Emergency Management

- Emergency Management Specialist is contracted to develop and deploy
  - Management tools that will link DRM plans and sector response plans - E.g. Drought Plans
  - Coordinate the information systems with GIS and Asset Management Systems operating with CIIC
  - Update EMCI website and social media channels
  - Review and recommend technological early warning options for high priority vulnerable sectors e.g APPS
- Clews Equipment for Nassau and Suwarrow

Project Management

- Project Manager
- Programme and Procurement Administrator
- Gender Specialist/Advisor (part time)
- Environmental & Social Safeguards Specialist/Advisor (part time)
- Finance Manager (part time)

- Each Major Component will also include:
  - Project Management
  - Communications
  - Travel
  - Monitoring and Evaluation

Water Security

- Water Security Specialist contracted to support the work within the Pa Enua Division of OPM
  - Coordinate the various water programmes by development partners including VSA specialists
  - Coordinate with other Government agencies water programmes and water issues affecting the Pa Enua
  - Developing management tools to implement the Island Drought Plans
  - Provide maintenance and training in the Pa Enua for Community and household storage tanks
  - Recommend further water storage investments on each island that will ensure water security and resilience targets as determined by the Water Modelling tool.
- Water Investment Fund
  - Further Community Tanks
  - Further household Tanks
  - Water Sources
  - Repairs and Maintenance

Challenges To Date

- Short time to complete the Proposal
  - SRIC 1 was 2 years to develop
- Confirmation of components and concept documents to be completed
- Information gaps
- Understanding what resilience means with regard to each sector and what SRIC 1 interventions have achieved
- Ensuring that the first CIG NIE proposal to AF is appropriate and sufficient capacity to implement

Food Security

Building healthy bodies and minds

- Northern Group Islands
  - Raised vegetable beds established at all schools
  - Composting beds with wood chipper machinery provided
  - Hydroponic nurseries for those islands that were excluded under SRIC 1
- Southern Group Islands
  - Young Farmer programme
  - Orchard Farming

Meitaki Maata

Economic Resilience

- Replanting of Native Trees and Vegetation to provide improved resilience on each island:
  - Coastal Protection (Coconut trees, Pandanus, Tamanu etc)
  - Traditional Medicines
  - Traditional Oils and Crafts
- **Agricultural Specialist Advisor contracted** –
  - Provide coordination of the native tree planting programme and food security programme on each island
  - Establish nurseries for each island for native tree and vegetation planting
  - Coordinate with Government agencies and other specialists to manage agricultural issues that may require further assistance e.g. pest or invasive species control and drought
  - Recommend and advise on uses for the Economic Resilience Fund that supports value added products.
- **Economic Resilience Fund**
  - Mentoring and specialist services to help specific persons to run their business is required to sustain some of the activities..

Annex 4: Consultations Participants List

Date: 11th July 2017
What: Programme components workshop
Objective: Workshop on the draft final programme components, outputs, activities, strategic results framework and budget
Where: OPM, CCCI Office, Rarotonga

No.:	Name	M/F	Email
1	Tenga Mana	M	tenga.mana@cookislands.gov.ck
2	Wilson Rani	M	wilson.rani@cookislands.gov.ck
3	Charles Carlson	M	Charles.carlson@cookislands.gov.ck
4	Krystina Tatuava	F	krystina.tatuava@cookislands.gov.ck
5	Lavinia Tama	F	lavinia.tama@cookislands.gov.ck
6	Bredina Drollet	F	bredina.drollet@cookislands.gov.ck
7	Otheniel Tangianau	M	otheniel.tangianau@cookislands.gov.ck
8	William Tuivaga	M	william.tuivaga@cookislands.gov.ck
9	Mat Purea	M	mat.purea@agriculture.gov.ck
10	Reboama Samuel	M	Raboama.samuel@cookislands.gov.ck
11	Paul Maoate	M	paul.maoate@cookislands.gov.ck
12	Mana Etches	M	mana.etches@cookislands.gov.ck
13	Gail Townsend	F	gail@education.gov.ck
14	Patrick Arioka	M	patrick.arioka@agriculture.gov.ck
15	Takili Tairi	M	takili.tairi@agriculture.gov.ck
16	Teariki Vakalalabure	M	teariki.vakalalabure@cookislands.gov.ck
17	Tata Vaeau	M	tangata.vaeau@cookislands.gov.ck
18	Valentina Wichman	M	valentino.wichman@cookislands.gov.ck
19	Mia Teurima	M	mia.teaurima@cookislands.goc.ck
20	Celine Dyer	F	Celine.dyer@cookislands.gov.ck
21	Melina Tuiravakai	F	Melina.tuiravakai@cookislands.gov.ck
22	Arona Ngari	M	Arona.ngari@cookislands.gov.ck

Consultation pics - Date: 11th July 2017
What: Programme components workshop

What: Atiu Island DRM Review & Training
Objective: Review DRM for Atiu and provide training to the DRMC and stakeholders
Where: Cook Islands Red Cross Society, Rarotonga
Date: 20th June 2017

No.:	Name	M/F	Occupation
1	Alima Utakea	M	Red Criss
2	Victoriano Tamatua	F	MOH
3	Tokearo Kae	M	INFRA
4	Syaka Tairi	F	Education
5	Rouru Tanga	M	Bluesky
6	Ina Mokoroa	M	Island Mayor
7	Maara Tairi	M	Atiu Isl. Govt.

8	Teata Bob	M	Agriculture
9	Andrew Matapakia	M	INFRA
10	Apii Porio	M	Island Council
11	Kore Samuel	M	Island Council
12	Teura Jny. Kea	M	Energy
13	Teremoana Windy	M	Mapumai Council
14	Marama Toa Ikike	M	Police
15	Terangi Mokoroa	F	Education

Date: 21 June 2017

No.:	**Name**	**M/F**	**Occupation**
1	Maire George	M	Energy
2	Marama Toa Ikike	M	Police
3	Alima Utakea	M	Agriculture
4	Tokerau Kae	M	INFRA
5	Terangi Mokoroa	F	Education
6	Rouru Tanga	M	Bluesky
7	Ina Mokoroa	M	Mayor
8	Maara Tairi	M	EO
9	Teata Bob	M	Agriculture
10	Andrew Matapakia	M	INFRA
11	Apii Porio	M	INFRA
12	Teremoana Windy	M	Mapumai Council

Date: 9th June 2017
What: Quarterly Climate Change Platform Meeting
Objective: To present the draft programme components to gather views on the scope of the Programme
Where: New Hope Church Hall, Parekura, Rarotonga

No.	Name	M/F	Organization
1	Professor John Hay	M	Private Sector
2	Imogen Ingram	F	ISAGS
3	Silas Tuaputa	F	Community member
4	Teiva Maui	F	Community member
5	Ngarangi Teiotu	F	Policy Unit
6	Charlene Hoff	F	Central Policy and Planning
7	Merita Wi-Kaiata	F	Central Policy and Planning
8	Catherine Dorafort	F	Central Policy and Planning
9	Charles Carlson	M	EMCI
10	Mana Etches	M	EMCI
11	Destiny	F	Cook Islands Disability Council
12	Lydia Sijp	F	EMCI
13	Rima Moekaa	F	CCCI
14	Charlie Ave	M	Public Health
15	James Kora	M	CCCI
16	Mia Teaurima	M	SRIC CC
17	Vaine Wichman	F	Private Sector
18	Lavinia Tama	F	MFEM
19	Krystina Tatuava	F	MFEM
20	Arona Ngari	M	Meteorological Service
21	Vanessa Jenner	F	ADB
22	Celine Dyer	F	CCCI
23	Melina Tuiravakai	F	SRIC CC
24	Karen Tairea	F	Public Health
25	Bredina Drollet	F	OPM
26	Allana Smith	F	TIS
27	Keu Mataroa	M	Regional R2R Coordinator
28	Teresa Manarangi	F	Consultant
29	Teariki Rongo	M	Consultant
30	Michael Yap	M	Consultant

Consultation Pics - Date: 9th June 2017
What: Quarterly Climate Change Platform Meeting

Date: 12-16 May 2017
What: Food Security Resilience Workshop on Sustainable Environmental Management for Climate Change, Mitigation and Risk Reduction Preparedness
Objective: Building the resilience of Island populations towards food security and nutrition while taking into account climate change and disaster risk reduction strategies
Where: Rarotonga, Cook Islands

No:	Name:	Agency:	Island	M/F
1	Pepe Raela	Island Government	Aitutaki	Male
2	Teata Bob	Island Government	Atiu	Male
3	Teuanuku Koroa	Island Government	Mangaia	Male
4	Tuine Oaariki	Island Government	Mauke	Female
5	Tokai Ngaiorae	Island Government	Mitiaro	Male
6	Mata Hetland	Cook Islands Red Cross	Rarotonga	Male
7	Mana Etches	Emergency Management Cook Islands	Rarotonga	Male
8	Itipouana Takaiti	Emergency Management Cook Islands	Rarotonga	Female
9	Lydia Sjip	Emergency Management Cook Islands	Rarotonga	Female
10	Paul Maoate	Infrastructure Cook Islands	Rarotonga	Male
11	Tangata Vaeau	Ministry of Health	Rarotonga	Male
12	Karen Tairea	Ministry of Agriculture	Rarotonga	Female
13	Teariki M. Purea	Ministry of Agriculture	Rarotonga	Male
14	Patrick Arioka	Ministry of Agriculture	Rarotonga	Male
15	Takili Tairi	Ministry of Agriculture	Rarotonga	Male
16	Torotoro Piiti	Ministry of Agriculture	Rarotonga	Male
17	Puna Kitai	Ministry of Agriculture	Rarotonga	Female
18	William Wigmore	Ministry of Agriculture	Rarotonga	Male
19	Brian Tairea	Ministry of Agriculture	Rarotonga	Male
20	Makiroa Beniamina	Island Government	Mangaia	Male
21	Tuaine George	Executive Officer	Aitutaki	Male

No:	Name:	Agency:	Island	M/F
22	Tiria Rere	Ministry of Agriculture	Rarotonga	Male
23	Charlie Rani	Minister's Office	Rarotonga	Male
24	Maria Tuoro	National Environment Service, R2R Project Officer	Rarotonga	Female
25	Tae Tutai	Ministry of Health	Rarotonga	Female
26	Fine Tuitupou-Arnold	Cook Island Red Cross	Rarotonga	Female
27	Ben Ponia	Ministry of Marine Resources	Rarotonga	Male
28	Sonny Tatuava	Ministry of Marine Resources	Rarotonga	Male
29	Taukea Rouru	Mauke Program Advisor	Mauke	Male
30	Tararo Ariki	Mauke Paramount Chief	Mauke	Male
31	Vaine Aberahama	Mayor of Mauke	Mauke	Male
32	Moekopu Vogel	Ministry of Agriculture	Rarotonga	Female
33	Tina Akama	Ministry of Agriculture	Rarotonga	Female
34	Mat Purea	Ministry of Agriculture	Rarotonga	Male
35	Patrick Arioka	Ministry of Agriculture	Rarotonga	Male

Date: May 2017
What: Consultations with island mayors and/or executive officers for island priorities on climate change resilience and disaster risk management
Objective: Identify Island Priorities for the Project
Where: Phone Consultations

No.:	Island	Name	M/F	Post
1	Mauke	Vaine Aberahama	M	Mayor
2	Mangaia	Teremoana Ataariki	M	Mayor
3	Atiu	Maara Tairi	M	EO
4	Palmerston	Arthur Neale	M	EO
5	Rakahanga	Neti Tarau	M	Mayor
6	Manihiki	Ngamata Napara	F	Mayor
7	Penrhyn	Rio Teika	M	Mayor
8	Mitiaro	Tuaine Patira Ngametua	M	Mayor
9	Pukapuka	Leve Warewaoa	M	Mayor
10	Aitutaki	Tekura Bishop	M	Mayor

Date: 15th to 19th March 2017
What: Tongareva OPM Water Security Survey Workshop
Objective: Consultation with the public and Island Community on the drought plan, DRM plan, CSDP, and Island Government Act 2012-13
Where: 4 islands: Penrhyn, Manahiki, Rakahanga, Pukapuka

NO.	Name	M/F	Occupation
1	Tamu Tapatai	M	Finance Officer
2	Ricky Boaza	F	Nurse
3	Saitu Marsters	M	Island Council
4	Tauivananga Niukore	M	INFRA
5	Tikura Tati	M	INFRA
6	Teheva Vinikii	M	INFRA
7	Maru Akatapuria	M	INFRA
8	Matara Akatepuria	M	Fisherman
9	Waland Solo	M	INFRA
10	Takahi Gifford	M	GR
11	Tini Junior Ford	M	INFRA
12	Tatahirangi Saitu	M	INFRA
13	Tuku Marsters	M	Public Health Inspector
14	Toroaata Marsters	M	Housewife
15	Hirinaki Pepe	F	Housewife
16	Metuakore Marsters	F	Housewife
17	Kura Teika	F	Housewife
18	Helen Marsters	F	BCI
19	Tepou Matorau For	F	Women Division
20	Rev. Tumukahu Saitu	M	Orometua
21	Kahui Taka	M	INFRA
22	Tautia Maretapu	M	Disable
23	Arumai William	M	MMR
24	William Marsters	M	Deputy Register
25	Alex Maretapu	M	Fisherman
26	Rev. Tapaitau M.	M	Minister Elect.
27	Rakoroa Mamia	M	INFRA
28	Karatia T. Rongo	M	Admin
29	Taia Taia	M	Admin
30	Marion Taa	F	Welfare Office
31	Suihera Marsters	M	Energy Officer
32	Hina Taime Williems	F	Nurse MOH
33	Atani Williams	M	Groundsman MOH
34	Tahirirava Matara	M	Energy
35	Taimana Matara	M	Marine
36	Abba Isaaka	F	Women Division
37	Turoa Tuaine	M	INFRA
38	Tinonui Tonitara	F	Caterer
39	Kanea? Turama	F	Energy Clerk

NO.	Name	M/F	Occupation
40	Tauraui? I.	F	Housewife
41	Tapangoa T.	F	Domestic
42	Hanapo V.	F	Office Sectery - Omoka school
43	Teheva Vinikii	M	Operator
44	Nancy F. Andrew	F	Housewife
45	Manongi Latham	F	Bluesky
46	Manuare M.	F	Housewife
47	Jane Akatapuria	F	Domestic
48	Tiriai Tapu	F	Domestic
49	Rima Heretama	F	Girls Brigade Rep.

2016

Date: 17th June 2016
What: Climate change and disaster risk platform meeting
Objective: Update on Projects (new and ongoing) related to Climate Change
Where: Cook Islands National Council of Women Office, Tauae

No.:	Name	M/F	Organisation	Email
1	Charlie Ave	M	MOH (CHS)	charlie.ave@cookislands.gov.ck
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3	Diamir de Scally	F	STUDENT RESEARCHER	-
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5	Vanessa Jenner	F	ADB	vanessa.jenner@cookislands.gov.ck
6	Krystina Tatuava	F	MFEM	krystina.tatuava@cookislands.gov.ck
7	Katherine Dorofaeff	F	CPPO - OPM	katherine.dorofaeff@cookislands.gov.ck
8	Mariena Papitai	F	CINDC	cindc14@oyster.net.ck
9	Ngarangi Tangaroa-Teio	F	CPPO - OPM	ngarangi.tangaroa-teio@cookislands.gov.ck
10	Siai Taylor	F	MFAI	siai.taylor@cookislands.gov.ck
11	Neti Herman	F	PUBLIC HEALTH	neti.herman@cookislands.gov.ck
12	Michael Yap	M	NIMMO-BELL (SRIC UPGRADE)	mike@nimmo-bell.co.nz
13	Imogen Ingram	F	ISLAND SUSTAINABILITY ALLIANCE CIS INC. (ISACI)	imogen@oyster.net.ck
14	Tatyana Vakatini	F		tatyana.vakatini@gmail.com
15	Arona Ngari	M	MET	arona.ngari@cookislands.gov.ck
16	Keu Mataroa	M	PROJECT MANAGER - R2R (ICI)	keu.mataroa@cookislands.gov.ck
17	Rangi Mitaera-Johnson	F	CIVIL SOCIETY - PA ENUA	pearl.essentials@gmail.com
18	Teiva Maui	F		teivanui.maui@gmail.com
19	Silas Tuaputa	F		silastuaputa@gmail.com
20	Melody Jonassen	F	MFAI	melody.jonassen@cookislands.gov.ck
21	John Hay	M	USP	johnhay@ihug.co.nz

Date: May 2016
What: Brilliant Resilient National Seminar
Objective: Consultations on the Second Joint National Action Plan on climate change adaptation and disaster risk management – identification of climate change related projects
Where: National Auditorium, Rarotonga, Cook Islands

No.:	Name	M/F	Department
1	Coral Pasisi	F	Green Climate Fund
2	Taito Nakalevu	F	SPC
3	Conrado Heruela	M	UNEP
4	Ngamata Napara	F	Mayor Manihiki
5	Don Mackenzie	M	Public
6	Noeline Browne	F	Traditional Leader
7	Teava Iro	M	TGA Titikaveka Growers
8	Prof. John E Hay	M	USP
9	Pua Hunter	F	OPM ICT Manager
10	Ben Ponia	M	HOM MMR
11	Puna Rakanui	M	Secretary Are Ariki
12	Mii Matamaki	F	NES
13	Aronga Ngari	M	Director MET Services
14	Tangi Tereapii	M	REDD
15	Teina Rongo	M	CCCI-SRICC Advisor
16	Willie Tuivaga	M	SCRICC Manager
17	Metua Vaimene	M	CI Tourism
18	Charles Carlson	M	Director EMCI
19	Lydia Sijp	F	EMCI/BSRP
20	Elizabeth Hosking	F	EMCI
21	Orla Bates	M	Public
22	Emily Bates	F	Public
23	Mii Kauvai	F	Muri Environment/CSO
24	Anne Tierney	F	Muri Environment/CSO
25	Jamie Short	F	Muri Environment/ICI
26	Stella Neale	F	Quality & Infection Control Manager MOH
27	Nga Teinangaro	F	Manager PTI -Punanga Tauturu
28	Allanah Smith	F	TIS
29	Liam Kokaua	M	TIS
30	Avaiki Aperau	M	TIS
31	Vanessa Jenner	F	DCD/ADB
32	Kyrstina Tatuava	F	DCD/GCF
33	Sandrina Thondoo	F	DCD
34	Tere Atariki	M	Mangaia Mayor
35	Upokoina Mokoroa	M	Atiu Mayor
36	Vaine Aberahama	M	Mauke Mayor
37	Tuaine Patira Ngametua	M	Mitiaro Mayor

No.:	Name	M/F	Department
38	Tekura(Poo) Bishop	M	Aitutaki Mayor
39	Taepae Goodley Marsters	M	Palmerston Mayor
40	Mary Taira Tom	F	Palmerston -Councilor
No.:	**Name**	**M/F**	**Department**
41	Neti Tarau	M	Rakahanga Mayor
42	Levi Walewaoa	M	Pukapuka Mayor
43	Rio Teika also (Puremana Tutavake)	M	Penrhyn Mayor
44	Una Banaba	F	Rakahanga- Finance Officer
45	Olivia Jonassen	F	Public
46	Yvette Kerslake	F	UNDP
47	Jamie De Aguinaga	M	UNDP
48	Tou Ariki	M	Kaumaiti Nu -Are Ariki
49	Takili Takili	M	MOA
50	Patrick Arioka	M	MOA
51	Mat Purea	M	MOA
52	Danielle Cochran	M	MOE
53	Jeanine Daniel	F	Omsbudsman
54	Teaora Tini	M	Omsbudsman
55	Ngatama Aniteria	M	Bluesky
56	Maara Tetava	M	Police Commissioner
57	John Strickland	M	Police
58	Faith Taokia	F	Mangaia SRICC
59	Desiree Harry	F	Mangaia SRICC
60	Rourumaru Papatua	M	Mangaia SRICC
61	Steaven Atariki	M	Mangaia SRICC
62	Makiroa Beniamina	M	Mangaia SRICC
63	Vina Carlson	F	Guest
64	David brundell	M	TGA Titikaveka Growers
65	Paul Maoate	M	ICI
66	Ake Lewis	F	Patron CICSO
67	Charlie Inggs	M	ICI-Policy Planner
68	Anthony Whyte	M	Mangaia EO
69	Pati Ravarua	F	Pukapuka EO
70	Excieve Papa	F	Youth Delegate Mauke School
71	Teata Purea Arteriano	F	Principal Mauke
72	Vaine Wichman	F	Penrhyn EO
73	Gail Townsend	F	HOM-MOE
74	Jane Taurarii	F	MOE
75	Techelle Punua	F	SCRIC Focal Person -Atiu
76	Sam Napa Snr	M	Floctech Systems
77	Patience Vainerere	F	Red Cross
78	Tabitha Berg	F	Public
79	Basilio Tutai Kaokao	M	Mauke
80	Dr Neti Tamarua	F	Director Public Health MOH

No.:	Name	M/F	Department
81	Tangata Vaeau	M	Publ Health Manager
82	Rei Enoka	M	INTAFF
83	Maureen Hilyard	F	Consultant
84	Tevairangi Tatuava	F	CI Child Welfare
85	Pastor Ngarima George	M	Traditional Taunga
86	Willie Morelle NZHC	M	NZ High Commission
87	Peter White NZHC	M	NZ High Commission
No.:	**Name**	**M/F**	**Department**
88	Nukutau Pokura	F	MFAI
89	Amelia Fukuoka	F	MFAI
90	Niki Rattle	F	Speaker of House-Parliament
91	Ngatuaine Maui	F	INTAFF
92	Teariki Rongo	M	MMR/SCRIC Focal Person Mauke
93	Teariki Maurangi	M	EO -Atiu
94	William Framhein	M	Media
95	Russell Thomas	M	Commissioner PSC
96	Clemency Taurarii	F	MOE
97	Tinika Elikana	M	HOM- Justice
98	Poko Keu	M	EO -Minister Albert Nicholas
99	John Engu	M	Private
100	Daniel Apii	M	Te Mou Enua c/- Jeannine Daniel
101	Nat Unuka	M	Te Mou Enua
102	Kata Tunua	F	Te Mou Enua
103	Ron Patia	M	BCI-Private Sector
104	Dallas Young	F	TAU
105	Nga Jessie	M	CI Fire Service/Matavera DRM
106	Repeta Puna	F	MOCD-Policy Manager
107	Rayman Newnham	M	Private
108	Kevin Iro	M	Marae Moana
109	Mary Dean	F	CI National Disability Council
110	Loloko Makuare-Williams	F	CI National Disability Council
111	Elizabeth Munro	F	MMR
112	Ruta Pokura	F	INTAFF
113	Nooroa Numanga	F	INTAFF
114	Mann Unuia	M	CEO-Minister of Health
115	Taputu Mariri	F	CI NCW
116	Ngametua Pokino	M	HOM-ICI
117	Te TuhiKelly	M	GEF/Red Cross
118	William Wigmore	M	MOA
119	Elizabeth Ponga	F	MOCD
120	Roanga Salunga	F	OPM
121	Kathryn	F	OPM
122	Melina Tuiravakai	F	SRICC
123	Kelvin Passfield	M	Te Ipukarea Society Ltd

Consultation pics - Date: May 2016
What: Brilliant Resilient National Seminar

Date: 4-8th April 2016
What: Operationalization of the Island Drought Management Plans
Objective: Conduct Training/Consultations in relation to operationalization of the islands drought plans already prepared with the island community in 2013
Where: Areora Community Hall; Atiu

#	**Name**	**M/F**	**Organisation**
1	Tuaine Rakei	M	Police
2	Tangata Vainepoto	M	Justice
3	Ina Mokoroa	M	Mayor
4	Tuainekore Samuel	F	Konitara
5	Andrew Matapakia	M	Infrastructure
6	Tapuni William	M	AIA
7	Marama Toa Ikike	M	Police
8	Kau Henry	M	Environment Officer
9	Puna Rau	M	BlueSky
10	Tura Koronui	M	Planter
11	Moetaua Boaza	M	Planter
12	Fr. Faustino Galo	M	Catholic Church
13	Paul Maaka	M	Public Health
14	Rangi Tutaka-Tatuava	F	Finance Officer – Atiu Island Admin
15	Maara Tairi	M	Agriculture
16	Tangata Edwards	M	INTAFF – Red Cross
17	Piri Touna	M	Govt Rep
18	Tangi Vainepoto	F	NGO
19	Marie Kataina	F	Domestic
20	Teariki Maurangi	M	Executive Officer
21	Techelle Kae-Punua	F	Atiu Focal Point – Climate Change
22	Apii Porio	M	Infrastructure
23	Beni Toki	F	Catholic/Areora Oire

Date: 29-31st March 2016
What: Operationalization of the Island Drought Management Plans
Objective: Conduct Training/Consultations in relation to operationalization of the islands drought plans already prepared with the island community in 2013
Where: Sunrise Hall; Mauke

No	Name	M/F	Organisation
1	Jack Keu	M	Infrastructure
2	Tuaine Oariki	F	Agriculture
3	Tonga Tararp	M	Infrastructure
4	Basilio Kaokao	M	NES
5	Edwin Ngariki	M	Water Supply
6	Ngamata Tapoki	M	Infra
7	Kupa Tararo	M	Infra
8	Tutavake Akamoeau	M	Water Supply
9	Bobby Tura	M	Water Supply
10	Christ Tamaka	M	Infra
11	Owen Samuela	M	Infra
12	Tutaka Tararo	M	Infra
13	Tereapii Keu	M	Agri
14	Tua Akarare	M	Agri
15	Une Ngametua	M	Infra
16	Tangata Rangi	M	Police
17	Pickering Taripo	M	Agri
18	Teokotai Ngaiorae	F	Dental – Health
19	Narii Tearii	M	Infra
20	Arapo Urarii	M	Energy
21	Daniel Tutaka	M	Infra
22	Bob Taneao	M	Infra
23	Vaine Aberahama	M	Planter
24	Teina Enua	M	Planter
26	Unlucky Vaine tutai	M	Energy
27	Ngarangi Tuakana	M	Pastor

Date: 15th March 2016
What: Climate change and disaster risk platform meeting
Objective: Updates and presentations about climate and disaster management activities in the country
Where: Rarotonga, Cook Islands

No.:	Name	M/F	ORGANISATION	Email
1	Matt Blacka	M		m.blacka@wrl.unsw.edu.au
2	Henrieu Marona	M	NCD	NCD
3	Nooroa Henry	M		johnmoko@oyster.net.ck
4	Hanapo Viniki		Tongareva Rep	
5	Vaine Wichman	F	Tongareva EO	arama@oyster.net.ck
6	Teina Rongo	M		teina.rongo@cookislands.gov.ck
7	John McLeod	M	Manihiki Focal Point	
8	Lucky Topetai	M		lucky.topeta@cookislands.gov.ck
9	Mia Teaurima	M		mia.teaurima@cookislands.gov.ck
10	Melina Tuiravakai	F		melina.tuiravakai@cookislands.gov.ck
11	Mata Hetland	F		hmata@redcross.org.ck
12	Anne Herman	F		amhfua@gmail.com
13	Mii Nimerota	F	OPM	mii.nimerota@cookislands.gov.ck
14	Katherine Dorofaeff	F	OPM	katherine.dorofaeff@cookislands.gov.ck
15	Jacqueline Evans	F	OPM	jacqueline.evans@cookislands.gov.ck
16	Vanessa Jenner	F	ADB	vanessa.jenner@cookislands.gov.ck
17	Alanna Smith	F	TIS	a.smith@tiscookislands.org
18	Jim Armistead	M		jim.armistead@cookislands.gov.ck
19	Arona Ngari	M		arona.ngari@cookislands.gov.ck
20	Ana Tiraa	F		ana.tiraa@cookislands.gov.ck
21	Pat Tuara Demmke	F		patricia.tuara@cookislands.gov.ck
22	Odi Tangianau	M	OPM	othaniel.tangianau@cookislands.gov.ck
23	Mii Matamaki	F	NES	mii.matamaki@cookislands.gov.ck
24	Teva Simiona	M		teva.simiona@gmail.com
25	Maria Tararo	F	NES R2R	
26	Taputu Mairi	F	CINCW	

Date: 1-3rd March 2016
What: Operationalization of the Island Drought Management Plans
Objective: Conduct Training/Consultations in relation to operationalization of the islands drought plans already prepared with the island community in 2013
Where: Mitiaro

No.:	Name	M/F	Organisation	Position
1	Tati Tutaka	M	Island Admin	Assit Operator
2	Tokai Ngaiore	M	Agriculture	Agri Officer
3	Rev Yakila Valoa	M	CICC	Church Minister
4	Maara Kimiora	M	Energy	Energy Officer
5	Ngametua Kimiora	M	Infrastructure	officer
6	Matauri Ngatuakana	M	Agriculture	
7	Roimata Rouru	F	Island Admin	Operator
8	Porima Henry	M	Island Admin	Wage worker
9	Punga Makitae	M	Agriculture	Agriculture worker
10	Teremoana Patia	M	Police	Police Officer
11	Tony Taupini	M	Island Admin	Staff
12	Te-Enua Porima	M	Agriculture	Staff
13	T Tuaputa	M	Agriculture	staff
14	Lane T	M	Infrastructure	staff
15	Kaa Patia	F	Island Admin	mechanic
16	Tuaine Ngametua	M	Island Admin	Senior Mechanic
17	Rua Teuira	M	Island Admin	Senior Mechanic
18	Ngarouru Tou	M	Marine Resources	Staff
19	Turangatira Turangatira Jnr	M	Infrastructure	Plumber
20	Teata Teava	M	Infrastructure	Staff
21	Julian Aupini Jnr	M	Infrastructure	Staff
22	Makara Murare	M	Infrastructure	Manager
23	Kaukura Kaiu	M	Is Govt	GR
24	Itu Taero	M	Blue Sky	Tech/Office Asst
25	Scuba Ngatuakana	M	Energy	staff
26	Mata Nootai	M	Police	Officer
27	Toru Newbegining	F	Maire Manager	Vainetini
28	Nga Pouao	F	widow	retired
29	Cecilia Samual Kimiora	F	NCW	NGO
30	Teei Aupini	M	Resident	
31	Okivana Vairoa	F	Resident	
32	Teau Pouao	F	Resident	
33	Liko yetu	F	Nurse	
34	Aretiare Toka	F	Resident	

Date: Tuesday 16th February 2016
What: Operationalization of the Island Drought Management Plans
Objective: Conduct Training/Consultations in relation to operationalization of the islands drought plans already prepared with the island community in 2013
Where: Mangaia

	Name	**M/F**	**Organisation**
1	Nooroa Samuela Jnr	M	Infrastructure
2	Nga Ivaiti	M	Island Council – Keia
3	Maine Ngariu	M	Planter
4	Daddy Mauriaiti	M	Traditional Chief
5	Steven Atariki	M	Youth
6	Mata Herman	M	Public Utility
7	Joseph Moeauri	M	Public Utility
8	Faith Taokia	F	Youth
9	Ne Tara	F	Red Cross
10	Makiroa Beniamina	M	SRICC
11	Teremoana Atariki	M	MIG
12	Mata Matamaki	F	MOH
13	Metu Ruatoe	M	Island Council
14	Junior Harry	M	Infrastructure
15	Tangimama Harry	F	TCD
16	Anthony Whyte	M	EO
17	Taoi Nooroa	M	Economic Development
18	Poroa Arokapiti	M	Internal Affairs

Date: 27 – 30 June
What: Mangaia Raurau Akamatutu Workshop
Objective: Raise awareness on resilience building activities
Where: Mangaia

No	**Name**	**G**	**Contact**
1	**Teremoana Atariki**	**M**	
2	**Doreen Tangatakino**	**F**	
3	**Tei Paio**	**M**	
4	**Ruru Tangatakino**	**F**	
5	**Ne Tara**	**F**	
6	**Poroa Arokapiti**	**M**	
7	**Maara Tuamingi**	**F**	
8	**Teina Ngametuatoe**	**M**	
9	**Lianne Taokia**	**F**	
10	**Tuara George**	**M**	
11	**Atetu Atetu**	**M**	
12	**Salaima Vavia**	**F**	
13	**Frances Matamaki**	**F**	
14	**Joshua Tutai**	**M**	
15	**Moetaekore Williams**	**F**	
16	**Vaiora Teremoana**	**M**	
17	**Julie Pukeiti**	**F**	
18	**Annie Matunga**	**F**	
19	**Nooke Tumutoa**	**M**	
20	**Taata Tangatakino**	**M**	

DATE: August 2016
What: Marorotu Workshop
Objective: To learn about how the people of Mitiaro catch maroro (flying fish) during spawning – building resilience using culture and traditional knowledge
Where: Mitiaro

No.:	NAME	M/F	OCCUPATION
1	Vaine Paretoa	M	Atiu Fishermen
2	Tereroa Mataio	M	Atiu Fishermen
3	Makara Murare	M	*
4	Leilani Aupuni	F	Student
5	Martein Taia	F	Student
6	Nicole Maara	F	Student
7	Athena Murare	M	Student
8	Rickhan Iro	M	Student
9	Teremoana Windy	M	Atiu Fishermen
10	Te-Enua Porima	M	*
11	Ngarouru Tou	M	*
12	Tony Tapuni	M	*
13	Tutai Tuaputa	M	*
14	Lane Topa	M	*
15	Tereau Nootai	F	*
16	Rangi Nooana	F	*
17	Maara Tokorangi	M	*
18	Tungane Makitae	F	*
19	Apiianga Vailoa	F	mama
20	Turua Murare	M	*
21	Tunoa Murare	F	*
22	Cecilia Samuela Kimiora	F	mama
23	Eugeny Nootai	F	mama
24	Teei Aupuni	M	*
25	Temou Raeputa	F	*
26	Aretiare Tokai	F	*
27	Porima Henry	M	*
28	Tuavai Taae	M	*
29	Tuaine Rakei	M	Atiu Fishermen
30	Maora Murare	M	*
31	Mata Nootai	M	*
32	Tiana Haxton	F	student
33	Anne Marie Tereva	F	student
34	Vainetutai Leon Moetaua	M	Mauke Fishermen
35	Tamaiti Tearii Junior	M	Mauke Fishermen
36	Brandon Kaukura	M	student
37	Tinapa Vailoa	F	student
38	Noema Tuavai	M	student

No.:	NAME	M/F	OCCUPATION
39	Tai George	F	mauke Marine Fisheries
40	Ngametua Terei	M	Mauke Fishermen

Annex 5: Environment and Social Management Plan Summary

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) SUMMARY

1. INTRODUCTION

This Environment and Social Management Plan (ESMP) summary has been prepared to highlight major environmental and social risks that will need to be addressed during the programme implementation.

The summary notes the key environmental and social baseline conditions within the programme's area of influence and the risk assessment of the key potential environmental and social impacts identified to be associated with the proposed project component activities. Mitigation measures designed to manage the identified limited and localized and residual impacts have also been summarized to ensure their effective implementation. A summary of the stakeholder identification, analysis and engagement process as well as the institutional and management arrangements have been formulated to ensure effective implementation of the designed management mitigation and monitoring plans also have been included. A further screening will be required during the final design of all component activites by using the TTV ESS ESD checklist attached as Annex 6.

2. PROGRAMME DESCRIPTION

The programme consists of three components:

Component 1. Strengthening disaster risk governance to manage disaster risk and enhancing disaster preparedness for effective response to "Build Back Better" in recovery, rehabilitation and reconstruction.

Component 2. Integrated water security management planning and implementation for Pa Enua communities

Component 3. Revitalised agricultural production systems strengthening island food sources and livelihoods in the Pa Enua.

3. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

Table 1 below summarises the environmental and social management plan for the programme. The Plan includes the main actions identified for each output, identified environmental and social impacts, proposed mitigation measures, and monitoring indicators to report on performance and compliance of the ESMP against the applicable environmental and social standards for the project.

4. INSTITUTIONAL ARRANGEMENT FOR MONITORING

The institutional arrangement for monitoring the performance and compliance at project, island and national level will involve the following key institutions during project implementation.

- Project level
  - Climate Change Cook Islands
  - Project Management Unit
  - Island Government
- Island level
  - Island Government,
- National level

Emergency Management Cook Islands, National Environment Service, Ministry of Internal Affairs, Ministry of Agriculture, Ministry of Health, Infrastructure Cook Islands and Ministry of Culture, Ministry of Education

Table 1 : Environment and Social Management Plan

Component 1 **Strengthening disaster risk governance to manage disaster risk and enhancing disaster preparedness for effective response to "Build Back Better" in recovery, rehabilitation and reconstruction**						
Main Activity	**Likely Impacts/**	**Mitigation Measures**	**Monitoring Tools/Indicator**	**Responsible Entity for Mitigation**	**Responsibility for Monitoring**	**Time Horizon**
Output 1: Expanded GeoPortal Disaster Risk Management Information System	Informed community on climate change issues	Not required	Geo Portal	Emergency Management and GIS Specialist	EMCI and Island Government	Entire project cycle
Output 2: Management response tools linking hazard risk assessments and the DRM Plans	Informed community on Disaster Risk Management and planning	Maintenance of automated weather station and Installation of Climate Early Warning Systems (Clews)	Geo Portal WMO standards	Emergency Management and GIS Specialist Cook Islands Meterological Service	EMCI and Island Government	Entire project cycle
Output 3: Robust Pa Enua DRM Plans and capacity building	Plans and trained community leaders to monitor and implement plans	Not required	Geo Portal	Emergency Management and GIS Specialist	EMCI and Island Government	Entire project cycle

Component 2 **Integrated water security management planning and implementation for Pa Enua communities**						
Main Activity	**Likely Impacts**	**Mitigation Measures**	**Monitoring Tools/Indicator**	**Responsible Entity for Mitigation**	**Responsibility for Monitoring**	**Time Horizon**
Output 1:Robust water Monitoring, reporting and assessment systems established and implemented through increased facilitation and the sharing of knowledge	Informed community on climate change issues And information for water security management	Not required	Geo Portal	Not Required	Water Committee and Water Security Engineer	Entire Project Cycle
Output 2. Water Resilient Plans including drinking water safety practices	Shortage of water supply during drought periods	Water maintenance training and compliance with NZ/AUS standards and codes for water supply Public Health Water quality testing programme Procure water	NZS 9201: Chapter 7: 1994 Public Health Act 2004 Internationally approved standards of water making equipment and water tanks	Water Committee and ICI	Water Committee and Water Security Engineer	

		making equipment and water tanks				
Output 3. Allocation of Water Security Fund (below are the proposed projects that will be considered having completed assessments of Output 1 and 2)						
• Repairs to concrete tanks and water catchment buildings	Temporary shortage of water Ownership of water tank and water catchment land sites Use of non-renewable natural resources, e.g. beach sand Building materials may not arrive on time	Rationed use of water from other community tanks Community landowner consultations prior to construction Identify suitable sand sources inland of the beach area Material for construction are on the islands	Community receives water as rationed. Confirmation of land ownership and transfer Alternative source of sand for concrete identified Shipping schedules (Materials landed)	Water Security Engineer	Island Government Water Committee and Water Security Engineer	Design and implementation of Repairs
• Construction of new community concrete tanks	Ownership of water tank land sites Use of non-renewable natural resources, e.g. beach sand Building materials may not arrive on time	Community landowner consultations prior to construction Identify suitable sand sources inland of the beach area	Confirmation of land ownership and transfer Alternative source of sand for concrete identified	Water Security Engineer	Island Government Water Committee and Water Security Engineer	Design and implementation of the community tanks

		Material for construction are on the islands				
• Reservoirs for agricultural purposes	Ownership of land sites Disturbance to top soil created by machinery and trucks Site specific soil erosion Introduction of invasive plant species Delay of work due materials not arriving on time	Community landowner consultations prior to construction Minimize cleared area Restoration and backfilling of land Consult NES and MoA and provide plan to minimize introduction of invasive species into an area, e.g. cleaning of machineries, revegetation plan, etc Material for construction are on the islands	Confirmation of land ownership and transfer Plans and measures in place – assessing level of erosion around the reservoir site Plan to prevent the introduction of invasive species Shipping schedules (Materials landed)	Water Security Engineer	Island Government Water Committee and Water Security Engineer National Environment Service	Design and implementation of the Reservoir

Component 3
Revitalised agricultural production systems strengthening island food sources and livelihoods in the Pa Enua

Main Activity	Likely Impacts	Mitigation Measures	Monitoring Tools/Indicator	Responsible Entity for Mitigation	Responsibility for Monitoring	Time Horizon
Output 1: Island plant and seedling nurseries	Site specific impacts during clearing of site and construction of nurseries Introduction of invasive species Delay in cover of site may give time for invasive species to establish Use of chemicals and pesticides	Will follow best environmental practice. Consult NES and MoA and provide plan to minimize introduction of invasive species into an area, e.g. cleaning of machineries, revegetation plan, etc Ensure Materials are on site	Cleared sites and Plan to minimize introduction of invasive species Materials on site. NZS 604: 2013 Timber framed building standards NZS 4121: 1985 Design and access and use of buildings and facilities by disabled persons Agriculture quarantine protocols to be followed	Agricultural Extension Specialist ICI	Agricultural Extension Specialist Island Government Ministry of Agriculture	Entire Project Cycle
Output 2: School gardens for the	Site specific impact impacts	Will follow best environmental	Cleared sites and Plan to	Agricultural Extension	Agricultural Extension	Entire Project Cycle

northern group islands	during clearing of site and construction of garden beds Introduction of invasive species Delay in cover of site may give time for invasive species to establish Use of chemicals and pesticides	practice. Consult NES and MoA and provide plan to minimize introduction of invasive species into an area, e.g. cleaning of machineries, revegetation plan, etc Ensure Materials are on site	minimize introduction of invasive species Materials on site. NZS 604: 2013 Timber framed building standards NZS 4121: 1985 Design and access and use of buildings and facilities by disabled persons. Agriculture quarantine protocols to be followed	Specialist	Specialist Island Government Ministry of Agriculture Ministry of Education	
Output 3: Tropical orchards technical support for Southern Group islands	Increased food for pest and thereby increasing pests that attack fruits, e.g. fruit piercing moths	Identify existing good bugs that eat pest that impact on fruits and introduce them locally (site	Number of fruit trees and land acreage managed Production of fruits on the island (site	Fruit Horticulturalist Specialist and Agricultural Extension Specialist	Ministry of Agriculture and Island Government	Entire Project Cycle

		specific)	specific) Agriculture quarantine protocols to be followed			
Output 4: Pa Enua Agriculture Knowledge Sharing Platform	Informed community on agriculture best practice	Not required	AGIntel database Increased community awareness and fruit production Agriculture quarantine protocols to be followed	Ministry of Agriculture	Ministry of Agriculture	Entire Project Cycle
Output 5: Allocation of Economic Resilience Fund (below are the proposed projects that will be considered and that meet the Fund criteria as provided)						
• Fencing of Farms/orchards	Site specific benefit to farmer	Not required	AGIntel database Productive farms	Ministry of Agriculture	Economic Resilience Committee	Design and implementation of project
• Irrigation	Competition amongst water users	Farmers to establish own water source	Number of water sources Farming areas irrigated	Water Security Engineer Agricultural Extension Specialist	Economic Resilience Committee	Design and implementation of project
• Small Equipment and Tools	Site specific benefit to farmer	Not required	AGIntel database	Agricultural Extension	Economic Resilience	Design and implementation

			Increased productivity	Specialist	Committee	of project
• Business Mentoring	Site specific benefit to farmer	Not required	AGIntel database Increased productivity Reduce stress on local species	Business Mentors	Economic Resilience Committee	Design and implementation of project

5. MONITORING ARRANGEMENTS FOR THE ESMP

Report	Main themes and objectives	Responsibility	Frequency	Method of communications
Stakeholder Engagement and Consultation report	To get better understanding and validation of the potential environmental and social issues that have been identified in ESMP and /or for new sites to solicit stakeholders views and narrowing down potential and significant environmental impacts of project of significance	Monitoring and Evaluation Specialist PMU	During implementation and as need to be, especially for new sites.	Wide dissemination to relevant parties, Island Governments, Ministries and stakeholders - Focus groups Local meetings with Aronga Mana
Monitoring reports	Measuring project indicators and mitigation measures	Monitoring and Evaluation Specialist Gender Specialist Environmental and Social Safeguards Specialist PMU	Annually	Wide dissemination to relevant stakeholders
Baseline survey report	Collecting information /data on existing social and physical conditions	Gender Specialist Monitoring and Evaluation Specialist Environmental and Social Safeguards Specialist	Once during inception of the project	Consultation and participatory workshop and dissemination to relevant stakeholders

6. PUBLIC CONSULTATION AND DISCLOSURE

Extensive Consultation sessions were conducted with primary stakeholders, including water users, community households as well as decision makers to voice their concerns and opinions on the project benefit, impact and reflection of their priorities. During inception phase further consultations will be held to confirm design and implementation processes. The summary of the main stakeholders consulted and dates are summarized in the main report Part II Section G Consultation Process.

7. CONCLUSION

In consideration of the above, there are no major environmental or social issue to impede the implementation of the planned programme and capacity development

works within the water and agriculture sectors. The benefits that will be derived from the proposed projects are significantly greater than the short-term and localized environmental and social impacts.

Annex 6: Environment Significance Declaration Form

SECTION A: GENERAL INFORMATION

A 1. Name of Applicant:			
A 2. Is the application on behalf of a business or organisation? State here			
A 3. Name of the Project or Activity:			
A 4. Project Address:			
Vaka		Land Title	
District		Part Section	
Tapere		Lot	
A 5. Nature of ownership of land (tick appropriate box)			
Occupation Right: □		Lease: □	
Vesting Order: □		Other:	
A 6. Contact Details:			
Phone Number		Mobile Number	
Email Address			
A 7. Person or persons who have vested interests in this activity			

A 8. Environment Significance Checklist (tick appropriate box)				
Will this development -	**Yes**	**No**	**Unsure**	**Comments**
i. cause erosion on site and neighbouring properties due to rain, surface water, wind or wave action?	□	□	□	
ii. take place within 30 metres of the defined foreshore area?	□	□	□	
iii. take place between the defined foreshore and the reef	□	□	□	
iv. take place on a site with a slope greater than 1:10 (slope of 15 degrees)	□	□	□	
v. take place above or affect any water intakes /catchments	□	□	□	
vi. take place on or affect any motu or makatea areas	□	□	□	
vii. impact on any species or species habitats	□	□	□	

SECTION B: PROPOSAL

B 1. Describe your project or activity?			
B 2. Does your project or activity take place on or relate to any of these areas of concern?			
Foreshore and Cook Islands Waters	□	Inland Waters	□
Wetlands	□	Sloping Land	□
Low lying area or depression	□	Makatea	□
Disposal of Chemicals or Waste	□	Protection of Species	□
Protected Area e.g. rā'ui	□	None of the above	□

B 3. Do any of these activity types fit the description of your proposal? Tick all that apply					
Foreshore Clearance	□	Foreshore Development	□	Foreshore Protection - Gabions	□
Foreshore Protection -	□	Foreshore Protection	□	Foreshore Protection -	□

Rock Revetments		– Groynes		Coastal Protection Units (CPUs)	
Development/clearance within the lagoon and Cook Islands Waters			□	Coastal Reclamation	□
Stream Clearance	□	Stream Development - Rock Revetments	□	Stream Development - Gabions	□
Stream Diversion	□	Stream dredging	□	Filling of wetlands	□
Vegetation clearance	□	Earthworks*	□	Excavation on sloping land	□
Mining of sand	□	Residential Development	□	Extension to residential development	□
Commercial Development	□	Commercial Extension /Reconstruction	□	Tourism Accommodation	□
Tourism Accommodation - Extension/Reconstruction	□	None of the above	□	Other Communications/Information (Collecting/transfer/storage/sharing)/training	□

B 4. Describe any features that are unique about your project or activity?
e.g. it is the only one of its kind

B 5. Are there any significant features of the present ecosystem? Describe
e.g. site for the protection of endangered species from extinction, heritage site

B 6. Brief description of what the land is currently being used for:

B 7. Which of these apply to the current use of the land?

	Yes	No	Unsure	Comments
Agriculture crops (commercial)	□	□	□	
Agriculture crops (subsistence)	□	□	□	
Live stock	□	□	□	
Residential	□	□	□	
Retail or Commercial Purposes	□	□	□	
Tourism	□	□	□	
Industrial	□	□	□	
Native Forest	□	□	□	
Bush or scrubland	□	□	□	
Developed shoreline	□	□	□	
Wetlands	□	□	□	
Reclaimed land (coastal or wetlands)	□	□	□	
Low lying or natural depression areas	□	□	□	
Aquaculture	□	□	□	
Recreational or public area	□	□	□	
Natural & cultural heritage	□	□	□	
Other	□	□	□	

Section C: Environment Significance Details (Please tick appropriately)
This checklist is used to identify physical, biological, social and economic factors which might be changed by your proposed project or activity. Usually a background study will show those factors or areas that an activity will or will not impact. A **"YES"** answer indicates that further consideration is necessary. A **"NO"** answer indicates that the activity will not impact those areas or factors.

NON LIVING THINGS

Will your project or activity directly or indirectly:				
C 1. Earth	**Yes**	**No**	**Unsure**	**Comments**
i. Require the use of earth moving equipment that could change the shape and natural layout of the land or destabilize the area causing land slips?	□	□	□	
ii. Destroy, cover or change any landform or natural feature unique to the area?	□	□	□	
iii. Will materials* for back filling be brought in from another site? If yes, what type and from where?	□	□	□	
iv. Will any materials* be removed from the site? If yes, what types?	□	□	□	
v. Involve the construction or erection of any wall or structure within the foreshore or Cook Islands waters?	□	□	□	
vi. Will a new road or access way be required?	□	□	□	
C 2. Water	**Yes**	**No**	**Unsure**	
i. Change the present water flow direction of a lagoon, stream, estuary or natural drainage causeway?	□	□	□	
ii. Will the project alter the existing surface water flows?	□	□	□	
iii. Be located in an area where flooding occurs often because of a nearby stream; or the area is likely to be affected by flood waters or sea surge and tropical cyclones?	□	□	□	
iv. Cause an increase or decrease in the amount and quality of water on the ground, underground or to the supply of drinking water?	□	□	□	

***Materials:** Includes materials such as silt, sand, soil, cobble, gravel, boulder, hard rock, coral, trees, vegetation

Will your project or activity directly or indirectly:				
C 3. Pollution	**Yes**	**No**	**Unsure**	**Comments**
i. Would it produce poisonous gases that could result in the air becoming less clean and dangerous to people?	□	□	□	
ii. Would it cause the production of excessive waste?	□	□	□	
iii. Would it cause the discharge of any chemical or its waste?	□	□	□	
iv. Would it cause noticeable bad smell?	□	□	□	
v. Cause more noise than usual or make the ground to tremble disturbing neighbours?	□	□	□	

2. LIVING THINGS

Will your project or activity directly or indirectly:				
C 4. Plants:	**Yes**	**No**	**Unsure**	**Comments**
i. Change the number of different plant species on the area?	□	□	□	

ii. Cause the numbers of special plants, or plants already low in numbers to be further decreased; or disturb the places these plants live in. These special plants include those that are not found anywhere else, or that are in danger of dying out completely?	□	□	□	
iii. Bring a new kind of plant into the area? If the new plant does not exist in the area naturally, then it might compete with the present plants resulting in other plants dying out?	□	□	□	
iv. Reduce the amount of land that could be used for agriculture, business, or other uses that might be important to the community?	□	□	□	
C 5. Animals:	**Yes**	**No**	**Unsure**	**Comments**
i. Destroy or ruin the places that animals live in? (i.e. birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)?	□	□	□	
ii. Change the population numbers of different kinds of animals?	□	□	□	
iii. Bring in a new kind of animal that does not already exist in the place, or that will cause other resident animals to move away from their usual living places?	□	□	□	

3. SOCIAL AND ECONOMIC FACTORS

Will your project or activity directly or indirectly:				
C 6. General:	**Yes**	**No**	**Unsure**	**Comments**
i. Cause you to break any law in the Cook Islands?	□	□	□	
ii. Support any existing plans, policies or goals made by the village, communities or by Government?	□	□	□	
iii. Contradicts any existing plans, policies or goals made by the village, communities or by Government	□	□	□	
iv. Alter or impact on any important scenic areas or natural land marks?	□	□	□	
v. Affect or destroy historical and significant sites such as marae, old buildings or artefacts?	□	□	□	
vi. Alter the aesthetics (natural and visual scenery) of the surrounding areas?	□	□	□	
C 7. Social:	**Yes**	**No**	**Unsure**	**Comments**
i. Disrupt households and existing businesses in the area?	□	□	□	
ii. Potentially disturb people's lifestyles or usual practices in the community or neighbourhood?	□	□	□	
iii. Involve the risk of an explosion or an accident happening thereby endangering people?	□	□	□	
iv. Create traffic detours, temporarily restrict access, etc?	□	□	□	
v. Use places commonly used by people	□	□	□	

such as parks, recreation areas, or wildlife sanctuaries or water flow areas which are protected for public purposes?				
vi. Produce more light, glare or shadows, e.g. glaring lights, overshadowing a planter's crop, etc?	□	□	□	
C 8. Economic:	**Yes**	**No**	**Unsure**	**Comments**
i. Cause fewer jobs or fewer businesses?	□	□	□	
ii. Cause other businesses or growers to move?	□	□	□	
iii. Cause the worth of the property to decrease?	□	□	□	
iv. Cause any changes to the inter-island movement of traffic either by air or sea?	□	□	□	

Section D: Operational Activities

Following the completion of this project or activity there may be additional impacts that need to be considered.

Will the ongoing operation of the proposed activity;				
D 1. Generate waste or pollution?	**Yes**	**No**	**Unsure**	**Comments**
i. Liquid waste (include the wash down of machinery, paint, oils, sewage)	□	□	□	
ii. Solid waste	□	□	□	
iii. Hazardous waste	□	□	□	
iv. Increase the level of noise	□	□	□	
v. Chemical pollutants	□	□	□	
vi. Gaseous wastes	□	□	□	
vii. Storm water runoff	□	□	□	
viii. If YES {to the above} can the amount of waste be managed within the site or will it be removed	Yes			
D 2. Biodiversity	**Yes**	**No**	**Unsure**	**Comments**
i. Impact on any bird, animal, plant or marine species or habitats?	□	□	□	
D 3. Social	**Yes**	**No**	**Unsure**	**Comments**
i. Disrupt households and existing businesses in the area?	□	□	□	
ii. Potentially disturb people's lifestyles or usual practices in the community or neighbourhood?	□	□	□	
iii. Involve the risk of an explosion or an accident happening thereby endangering people?	□	□	□	
iv. Create traffic detours, temporarily restrict access, etc?	□	□	□	
v. Use places commonly used by people such as parks, recreation areas, or wildlife sanctuaries or water flow areas which are protected for public purposes?	□	□	□	
vi. Produce more light, glare or shadows, e.g. glaring lights, overshadowing a planter's crop, etc.	□	□	□	

D 4. Could the activity create additional impacts to the country's:				
	Yes	**No**	**Unsure**	**Comments**
i. Energy	□	□	□	
ii. Transport and Parking Space	□	□	□	
iii. Water	□	□	□	

iv. Emergency services (fire, ambulance, cyclone shelters)	□	□	□	
v. Waste management facilities	□	□	□	
vi. Community Facilities	□	□	□	

Annex 7: Detailed Budget Notes

		Activity	Cost particular	Unit type	Unit cost	Quantity	Total	Total	Notes
							ND	USD	
Component 1: Strengthening disaster risk governance to manage disaster risk and enhancing disaster preparedness for effective response to "Build Back Better" in recovery, rehabilitation and reconstruction									
			Media & communications	Annual	3,500	3	10,500	7,665	Fees for specialist
			Project administration	Annual	10,000	3	30,000	21,900	Fees for personnel support
		National workshop for DRM	Rarotonga travel, venue, catering, accomodation	Meeting	15,000	1	15,000	10,950	Expenses for national DRM workshop
			Telecommunications & media	Annual	6,500	3	19,500	14,235	Annual expenses for telecom/media
			Agency component coordination	Annual	25,000	3	75,000	54,750	Fees for coordination support in EMCI
			Specialist travel South Group	Round	2,750	1	2,750	2,008	Travel expenses for specialist
			Per diem	Day	70	15	1,050	767	Travel expenses for specialist
			Accommodation	Day	100	15	1,500	1,095	Travel expenses for specialist
			ESS travel South Group	Round	2,750	1	2,750	2,008	Travel expenses for ESS specialist
			Per diem	Day	70	15	1,050	767	Travel expenses for ESS specialist
			Accommodation	Day	100	15	1,500	1,095	Travel expenses for ESS specialist
Output 1: Expanded GeoPortal Disaster Risk Management Information System	1.1.1	Contracting Emergency Management/GIS Specialist	Fees	Month	4,500	30	135,000	98,550	Fees for specialist
			Specialist + EMCI staff x 1						
			Travel North Group	Lump sum	50,000	1	50,000	36,500	Travel expense for specialist and EMCI
			Per diem	Lump sum	70	120	8,400	6,132	Travel expense for specialist and EMCI
			Accommodation	Day	100	120	12,000	8,760	Travel expense for specialist and EMCI
			Venue/ catering	Meeting	250	10	2,500	1,825	Expense for island meetings
			Training & on-island costs	Lump sum	10,000	1	10,000	7,300	Expense for island training
	1.1.2	GIS Taskforce policy-making	Venue/ catering	Meeting	150	6	900	657	Expense for taskforce meetings
			ArcGis licenses & maintenance	Annual	15,000	3	45,000	32,850	Expense for software licence + maintenance
Output 2: Management response tools linking hazard risk assessments and the DRM Plans	1.2.1	Developing DRM tools and interface	Fees incl in specialist		-		-	-	
	1.2.2	Sourcing apps to enhance GeoPortal data capture and alert information dissemination	Fees incl in specialist		-		-	-	
			Licenses apps	Lump sum	10,000	1	10,000	7,300	Expense for apps licences
	1.2.3	Installing AWS in Suwarrow and Nassau	Equipment	AWS	15,000	2	30,000	21,900	Expense for AWS equipment
			Consultant	Lump sum	5,000	1	5,000	3,650	Fees for AWS specialist
			Travel	Round	20,000	1	20,000	14,600	Travel expense for AWS specialist
			Per diem	Day	70	12	840	613	Travel expense for AWS specialist
			Accommodation	Day	100	12	1,200	876	Travel expense for AWS specialist
Output 3: Robust Pa Enua DRM Plans and capacity building	1.3.1	Island DRM surveys for GeoPortal	Survey cost Pa Enua support	Lump sum	33,000	1	33,000	24,090	Expense for Pa Enua survey
			Specialist Travel South Group	Round	2,750	1	2,750	2,008	Travel expense for specialist
			Per diem	Day	70	20	1,400	1,022	Travel expense for specialist
			Accommodation	Day	100	20	2,000	1,460	Travel expense for specialist
	1.3.2	Upgrading island DRM plans to align with national DRM policy	EMCI staff x 2 + Red Cross x 1				-	-	
			Travel South Group	Round	8,250	6	49,500	36,135	Travel expense EMCI and Red Cross
			Per diem		70	360	25,200	18,396	Travel expense EMCI and Red Cross
			Accommodation	Day	100	360	36,000	26,280	Travel expense EMCI and Red Cross
			Venue/ catering	Meeting	250	30	7,500	5,475	Expense for island meetings
			Training costs	Lump sum	20,000	1	20,000	14,600	Expense for island training
	1.3.3	Training in GeoPortal and implementing the DRM plans	Specialist + EMCI staff x 2		-		-	-	
			Travel South Group	Round	8,250	2	16,500	12,045	Travel expense for specialist and EMCI
			Per diem	Day	70	120	8,400	6,132	Travel expense for specialist and EMCI
			Accommodation	Day	100	120	12,000	8,760	Travel expense for specialist and EMCI
			Training costs	Lump sum	20,000	1	20,000	14,600	Expense for island training
TOTAL							**725,690**	**529,754**	

		Activity	Cost particular	Unit type	Unit cost	Quantity	Total NZD	Total USD	Notes
Component 2: Integrated water security management planning and implementation for Pa Enua communities									
			Media & communications	Annual	3,500	3	10,500	7,665	Fees for specialist
			Project administration	Annual	10,000	3	30,000	21,900	Fees for personnel support
		National workshop for water security	Rarotonga travel, venue, catering, accomodation	Meeting	15,000	1	15,000	10,950	Expenses for national water security workshop
			Telecommunications	Annual	1,500	3	4,500	3,285	Annual expenses for telecom
			Agency component coordination	Annual	12,000	3	36,000	26,280	Fees for coordination support in OPM/ICI
			Specialist travel South Group	Round	2,750	1	2,750	2,008	Travel expenses for specialist
			Per diem	Day	70	15	1,050	767	Travel expenses for specialist
			Accommodation	Day	100	15	1,500	1,095	Travel expenses for specialist
			ESS travel South Group	Round	2,750	1	2,750	2,008	Travel expenses for ESS specialist
			Per diem	Day	70	15	1,050	767	Travel expenses for ESS specialist
			Accommodation	Day	100	15	1,500	1,095	Travel expenses for ESS specialist
Output 1: Robust water monitoring, reporting and assessment systems established and implemented	2.1.1	Contracting water security Specialist	Fees	Month	4,500	30	135,000	98,550	Fees for water specialist
	2.1.2	Water Committee policy-making	Venue/ catering	Meeting	100	12	1,200	876	Expense for committee meetings
	2.1.3	National water security data warehouse	Specialist + OD		-		-	-	
			Travel North Group	Round	25,000	1	25,000	18,250	Travel expense for specialist+OPM
			Per diem	Day	70	36	2,520	1,840	Travel expense for specialist+OPM
			Accommodation	Day	100	36	3,600	2,628	Travel expense for specialist+OPM
			Travel South Group	Round	5,500	1	5,500	4,015	Travel expense for specialist+OPM
			Per diem	Day	70	30	2,100	1,533	Travel expense for specialist+OPM
			Accommodation	Day	100	30	3,000	2,190	Travel expense for specialist+OPM
			Survey cost Pa Enua support	Lump sum	33,000	1	33,000	24,090	Expense for Pa Enua survey
			Water measuring equipment	Lump sum	20,000	1	20,000	14,600	Expense for equipment
Output 2: Water Resilient Plans including drinking water safety practices	2.2.1	Upgrading island water security plans to improve water resilience	Specialist + OD		-		-	-	
			Travel North Group	Round	25,000	1	25,000	18,250	Travel expense for specialist+OPM
			Per diem	Day	70	36	2,520	1,840	Travel expense for specialist+OPM
			Accommodation	Day	100	36	3,600	2,628	Travel expense for specialist+OPM
			Travel South Group	Round	5,500	1	5,500	4,015	Travel expense for specialist+OPM
			Per diem	Day	70	30	2,100	1,533	Travel expense for specialist+OPM
			Accommodation	Day	100	30	3,000	2,190	Travel expense for specialist+OPM
			Venue/ catering	Meeting	250	11	2,750	2,008	Expense for island meetings
	2.2.2	Water quality testing programme	Fees incl in specialist		-		-	-	
			Travel included		-		-	-	
			Equipment testing	Island	1,000	11	11,000	8,030	Expense for equipment
	2.2.3	Water maintenance training including WASH	MoH & Red Cross		-			-	
			Travel North Group	Round	25,000	1	25,000	18,250	Travel expense MoH+Red Cross
			Per diem	Day	70	48	3,360	2,453	Travel expense MoH+Red Cross
			Accommodation	Day	100	48	4,800	3,504	Travel expense MoH+Red Cross
			Water Quality testing Consumables	Lump sum	5,000	1	5,000	3,650	Expense for consumables
		(Complement Water makers and On site testing of Public Water Standpipes)	Consumables - Water Quality Testing for Ecoli	Lump sum	10,000	1	10,000	7,300	Expense for consumables
			Equipment water making desalination	Lump sum	50,000	1	50,000	36,500	Expense for equipment
			Consumables water making desalination	Lump sum	10,000	1	10,000	7,300	Expense for equipment
			Venue/ catering	Meeting	250	22	5,500	4,015	Expense for island meetings
Output 3: Allocation of Water Security Fund	2.3.1	Set up criteria and governance for the WSF	Fees incl in specialist		-		-	-	
	2.3.2	Advising proponents on project proposals	Fees incl in specialist		-		-	-	
	2.3.3	WSF committee governance	Venue/ catering	Meeting	100	12	1,200	876	Expense for committee meetings
	2.3.4	Grant administration and monitoring	Fees incl in specialist		-		-	-	
			Fund preliminary allocation				-	-	
			Water storage	Lump sum	150,000	1	150,000	109,500	Expense allocation for water storage
			New community tanks	Lump sum	175,000	1	175,000	127,750	Expense allocation for community tanks
			Repair community tanks	Lump sum	175,000	1	175,000	127,750	Expense allocation for repairs
TOTAL							**1,007,850**	**735,731**	

		Activity	Cost particular	Unit type	Unit cost	Quantity	Total	Total	Notes
							NZD	USD	
Component 3: Revitalised agricultural production systems strengthening island food sources and livelihoods in the Pa Enua									
			Media & communications	Annual	3,500	3	10,500	7,665	Fees for specialist
			Project administration	Annual	10,000	3	30,000	21,900	Fees for personnel support
		National workshop for agriculture	Rarotonga travel, venue, catering, accomodation	Meeting	15,000	1	15,000	10,950	Expenses for national agriculture workshop
			Telecommunications	Annual	1,500	3	4,500	3,285	Annual expenses for telecom
			Agency component coordination	Annual	12,000	3	36,000	26,280	Fees for coordination support in MoA
			Specialist travel South Group	Round	2,750	1	2,750	2,008	Travel expenses for specialist
			Per diem	Day	70	15	1,050	767	Travel expenses for specialist
			Accommodation	Day	100	15	1,500	1,095	Travel expenses for specialist
			ESS travel South Group	Round	2,750	1	2,750	2,008	Travel expenses for ESS specialist
			Per diem	Day	70	15	1,050	767	Travel expenses for ESS specialist
			Accommodation	Day	100	15	1,500	1,095	Travel expenses for ESS specialist
Output 1: Island plant and seedling nurseries	3.1.1	Contracting agriculture specialist	Fees	Month	6,000	6	36,000	26,280	Fees for agri specialist
	3.1.2	Design/review plant nursery for each island	Specialist + MOA staff		-		-	-	
			Travel North Group	Round	25,000	1	25,000	18,250	Travel expense for specialist + MoA
			Per diem	Day	70	48	3,360	2,453	Travel expense for specialist + MoA
			Accommodation	Day	100	48	4,800	3,504	Travel expense for specialist + MoA
			Travel South Group	Round	5,500	1	5,500	4,015	Travel expense for specialist + MoA
			Per diem	Day	70	30	2,100	1,533	Travel expense for specialist + MoA
			Accommodation	Day	100	30	3,000	2,190	Travel expense for specialist + MoA
	3.1.3	Build and operate plant nursery for each island	Specialist + MOA staff		-		-	-	
			Supplies	Nursery	10,000	11	110,000	80,300	Expense for supplies
			Equipment	Nursery	10,000	11	110,000	80,300	Expense for equipment
			Travel North Group	Round	25,000	1	25,000	18,250	Travel expense for specialist + MoA
			Per diem	Day	70	84	5,880	4,292	Travel expense for specialist + MoA
			Accommodation	Day	100	84	8,400	6,132	Travel expense for specialist + MoA
			Travel South Group	Round	5,500	1	5,500	4,015	Travel expense for specialist + MoA
			Per diem	Day	70	50	3,500	2,555	Travel expense for specialist + MoA
			Accommodation	Day	100	50	5,000	3,650	Travel expense for specialist + MoA
Output 2: School gardens for the northern group islands	3.2.1	Planning for gardens with schools in Northern Group	Specialist + MOA staff		-		-	-	
Schools: 2 @ for Manihiki and Penrhyn			Travel North Group	Round	25,000	1	25,000	18,250	Travel expense for specialist + MoA
1@ for:			Per diem	Day	70	84	5,880	4,292	Travel expense for specialist + MoA
Pukapuka			Accommodation	Day	100	84	8,400	6,132	Travel expense for specialist + MoA
Nassau			Educational resources	Lump sum	30,000	1	30,000	21,900	Expense for curriculum
Rakahanga	3.2.2	Build, equip and operate school garden	Supplies	Garden	10,000	7	70,000	51,100	Expense for supplies
Palmerston - completed			Equipment	Garden	50,000	7	350,000	255,500	Expense for equipment
			Travel North Group	Lump sum	25,000	1	25,000	18,250	Travel expense for specialist + MoA
			Per diem	Day	70	84	5,880	4,292	Travel expense for specialist + MoA
			Accommodation	Day	100	84	8,400	6,132	Travel expense for specialist + MoA
	3.2.3	Advice for home gardens	Travel incl		-		-	-	
Output 3: Tropical orchards technical support for southern group islands	3.3.1	Contracting fruit horticulturalist	Fees	Month	6,000	9	54,000	39,420	Fees for hort specialist
	3.3.2	Assessing and planning for orchards in Southern Group	Horticulturalist + MOA staff		-		-	-	
			Travel South Group	Round	5,500	1	5,500	4,015	Travel expense for hort + MoA
			Per diem	Day	70	50	3,500	2,555	Travel expense for hort + MoA
			Accommodation	Day	100	50	5,000	3,650	Travel expense for hort + MoA
			Venue/ catering	Meeting	250	5	1,250	913	Expense for island meetings
	3.3.3	Equip and build capacity to implement plans	Fees incl in horticulturalist		-		-	-	
			Supplies	Island	20,000	5	100,000	73,000	Expense for supplies
			Equipment	Island	20,000	5	100,000	73,000	Expense for equipment
	3.3.4	Strategy for agriculture water use and supply	Fees incl in horticulturalist		-		-	-	
			Equipment	Orchard	20,000	5	100,000	73,000	Expense for equipment
Output 4: Pa Enua Agriculture Knowledge Sharing Platform	3.4.1	Expand AgIntel database to Pa Enua	AgIntel specialist	Annual	15,000	2	30,000	21,900	Fees for AgIntel specialist
			AgIntel survey support	Island	2,000	11	22,000	16,060	Expense for Pa Enua survey
	3.4.2	Knowledge sharing of E-Agriculture information	E-Agriculture specialist	Annual	15,000	1.5	22,500	16,425	Fees for E-agri specialist
Output 5: Allocation of Economic Resilience Fund	3.5.1	Set up criteria and governance for the ERF	Fees incl in specialist		-		-	-	
	3.5.2	Advising proponents on project proposals	Fees incl in specialist		-		-	-	
	3.5.3	ERF committee governance	Venue/ catering	Meeting	100	12	1,200	876	Expense for committee meetings
	3.5.4	Grant administration and monitoring	Fees incl in specialist		-		-	-	
			Fund preliminary allocation				-	-	
			Water reticulation	Lump sum	87,000	1	87,000	63,510	Expense allocation for water reticulation
			Fencing	Lump sum	87,000	1	87,000	63,510	Expense allocation for fences
			Business activities	Lump sum	87,000	1	87,000	63,510	Expense allocation for business activities
TOTAL							**1,694,150**	**1,236,730**	