



ADAPTATION FUND

Project Completion Summary

In accordance with the project agreement, implementing entities are required to submit a project completion report within six (6) months after Project completion, and the final project progress report (PPR) is considered as a project completion report. While the PPRs meet technical requirements, the information is reported by year and its format is not ideal to convey the overall information and knowledge to wider and more general audiences. To supplement this, implementing entities are requested to prepare a project completion summary.

A project completion summary is intended to cover an entire project life in a reader friendly format by compiling submitted single-year PPRs. It also gives implementing entities an opportunity to express and share insights from project implementation, findings, challenges etc. which may not be presented by PPRs and captured by a final evaluation report.

A project completion summary consists of narrative information (Section A) and financial information (Section B). Any other information (Section C) can be added to the report as an option. Most of the contents can be filled in by copy-and-paste from the submitted PPRs. The completion report should be no more than 20 pages (excluding annexes).

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Project Completion Summary

Section A: Project result and performance

1. Basic information

Title of project/programme	Akamatutu'anga kia Tukatau te Ora'anga I te Pa Enuā (Pa Enuā Action for Resilient Livelihoods (PEARL))
Project/Programme category	Concrete adaptation
Project period (if the project was granted an extension, include the original as well as the revised completion date)	06-12-2018 to 06-12-2021 revised 06-06-2022
Country(ies)	Cook Islands
Sector(s)	Multi-sector
Implementing entity name	Ministry of Finance and Economic Management Cook Islands
Type of implementing entity (MIE, NIE or RIE)	NIE
Executing entity(ies)	Office of the Prime Minister: - Climate Change Cook Islands - Emergency Management Cook Islands Ministry of Agriculture Infrastructure Cook Islands
Amount of financing approved (USD)	2,999,125
Project contact(s)	emily.pierre@cookislands.gov.ck
Date of report	5 December 2022

2. Key milestones – Please refer to the overview tab in the latest PPR. For the delay in project implementation and related reasons refer to the lessons learned tab, section on “implementation and adaptive management”

Project inception	6th December 2018
Mid-term review (if applicable)	n/a
Project completion	6 th June 2022
Terminal evaluation	Feb 2023
If any, delay in implementation and reasons for delay	Delayed due to COVID19 (AF Board Decision B.35b/16)

3. Project overview and description

The Cook Islands experiences a range of natural hazards, including tropical cyclones, tsunamis, 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 Project aptly titled “Akamatutu'anga kia Tukatau te Ora'anga I te Pa Enua (Pa Enua Action for Resilient Livelihoods (PEARL)”, aims to build and implement an integrated approach to further increase the adaptive capacity and resilience of the pa enua or remote island communities and ecosystems to disaster risk and climate change impacts. It will do so through the following Project Components:

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

Executing Entity: PMU - Climate Change Cook Islands - Office of the Prime Minister (OPM)

Executing partners: Comp 1. Emergency Cook Islands –OPM & Meteorological Services, Component 2. Infrastructure Cook Islands and, Component 3. Ministry of Agriculture

4. Results and key outcomes

(Alignment with the Adaptation Fund core impact indicators – Number of Direct Beneficiaries reached including women; Trainings conducted including women trained, Early Warning Systems (EWS); Assets Produced, Developed, Improved, or Strengthened; Natural Assets Protected or Rehabilitated i.e. hectares of natural habitats/ meters of coastlines) – *Please refer to the “Performance at completion” in the Results Tracker section in the last PPR to extract this information.*

Indicator	Baseline	Project Target	Project Achievements
Integrated economic, structural, legal, social health, cultural, educational, environmental, technological and institutional data created at the Pa Enua level and aggregated at the national level.	Separate and non-integrated partial data sets. Baseline data sets aggregated under the BSRP Project 2014-2017	An integrated and inclusive data base is established at the national level.	100% achieved. Aggregated and updated data, enhancement and expand data sets including socioeconomic impacts pre and post COVID-19 Pandemic. 2018- 2021

Number of Pa Enea islands with baseline and updated datasets in the GeoPortal Disaster Risk Management Information System	Nil Pa Enea with baseline and updated datasets in the GeoPortal	All 11 Pa Enea with baseline and updated datasets in the GeoPortal	100% achieved. 2021- Islands of Penrhyn, Manihiki and Rakahanga were completed In 2021, 2019 and 2020 Palmerston, Nassau, Aitutaki, Mauke, Mitiaro, Atiu and Mangaia were updated. 2020 DRM Household Surveys were conducted in Rarotonga.
		Three critical high level hazard risk assessment dataset in the GeoPortal	100% reached. AWS - CLEWS DRM and COVID 19 Household Surveys DRM Plans MET Drought Reports. For sustainability of the Project the Cook Islands ICT Department is conducting the licenses and maintenance of the ArcGIS licenses/server and installation of software on approved GIS users, working with Supplier Eagle Technology in New Zealand and partners EMC/ICI. DRM Information and Communications was strengthened with the procurement and training of Satellite Phones for each of the Pa Enea and Rarotonga to communicate during times of disaster, in partnership with each island government, EMCI, Office of the Prime Minister and Cook Islands Red Cross. https://www.facebook.com/profile/100064291405585/search/?q=satellite
Formalise the GIS Taskforce Meetings	No GIS Taskforce	At least 6 meetings per year	100% reached Meetings are ongoing and on task. GIS Taskforce was formalised in 2019. The latest developments included the adoption of a Geospatial Policy in 2020 and also the adoption of the use of ArcGIS Software for geospatial data management in 2021.
Number of management response tools/Early Warning Systems	No management response tools	Three management response tools	PMU: 100% reached AWS – CLEWS DRM Plans MET Services Drought Reports Social Media CSDP NSDP JNAP II COVID-19 Response and DRM Household Survey Website, GEO Portal and information dissemination strengthened in Q1 2021.

<p>Usage of management response tool/Early Warning System</p>	<p>No Management response tools</p>	<p>Monthly usage of management tools</p>	<p>100% reached These are aggregated. Communication and Awareness has exceeded all targets for 2021 and 2022 through social media, print media, radio and images. Workshop with 30 participants was also support for understanding rainfall and being better prepared with Cook Islands Met Services in March. Link - https://www.cookislandsnews.com/national/weather/understanding-rainfall-and-being-better-prepared/ https://www.facebook.com/emciCK/posts/pfbid0y3Pjp7UTcwHxewgnJo8JnvzBpShk8wVrUpGKFmu2TMSTGpfKfbXqFMoHRsNofzqVI Climate Science Expo Aitutaki Dec - https://www.facebook.com/climatechangecookislands/posts/4747438771965629 Sat Phones - https://www.facebook.com/climatechangecookislands/posts/4729568547085985 AWOS install in Aitutaki- https://www.facebook.com/climatechangecookislands/videos/263412348990613/ Brilliant Resilient Workshop- https://www.facebook.com/climatechangecookislands/posts/4353713754671468 Northern Group DRM Household Survey- https://www.facebook.com/climatechangecookislands/posts/3858500144192834 and https://www.facebook.com/climatechangecookislands/posts/3872439752798873 Geo Portal Southern Group Training follow up - https://www.facebook.com/climatechangecookislands/posts/4747438771965629 Geo Portal Southern Group Training - https://www.facebook.com/climatechangecookislands/posts/3796813897028126 Social Media - Facebook, https://www.facebook.com/emciCK, https://www.facebook.com/climatechangecookislands, https://www.facebook.com/cookislands.meteorological. https://www.facebook.com/DCDivision/Publications - CSDP NSDP JNAP II GEO Portal - and information dissemination strengthened in Q1 2021. Geoportals hosted at https://ckgov.maps.arcgis.com.</p>
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<p>New open source or commercial App obtained for the GeoPortal</p>	<p>No App</p>	<p>At least one App is obtained and used</p>	<p>100% reached The Survey Form for DRM Household Surveys developed initially using Kobo Toolbox in 2019 was reviewed and upgraded to use ArcGIS in particular Survey 123. The DRM Household Survey Forms was therefore upgraded to use ArcGIS, and in particular, Survey123 as the tool for developing survey forms/apps. In addition, COVID-19 socioeconomic data collection was also developed using ArcGIS. ArcGIS Licensed Procured on an annual basis. AWS Smart App in Beta Testing</p>
<p>Climate Early Warning Systems are operating on Nassau and Suvarrow</p>	<p>No Climate Early Warning Systems on Nassau and Suvarrow</p>	<p>Climate Early Warning Systems are installed and operating on Nassau and Suvarrow</p>	<p>100% reached Under the PEARL AF Project, AWS installation was completed on the Pa Enea Islands of Palmerston, Nassau and Suvarrow. First AWOS in the Pa Enea was installed on Aitutaki. This was implemented by Cook Islands MET Services and installed by young Cook Islanders in partnership with the UNDP RESPAC Fund and AF Fund with localize installation. Target of 2 (Suvarrow and Nassau) AWS installations were strengthened with an additional AWS installed in Palmerston and the first Pa Enea AWOS at the Airport in Aitutaki. The completion of the AWS installation for the northern group has improved our capability in monitoring meteorological events which influences global climate change. Project activities are achieved.</p>
<p>Number of Pa Enea DRM Plans updated to 2017 National DRM Plan</p>	<p>One Pa Enea DRM Plan (Atiu) updated to 2017 National DRM Plan</p>	<p>All 10 Pa Enea DRM Plans updated to 2017 National DRM Plan</p>	<p>100% Achieved. This is completed and currently being strengthened and updated. DRM Plans endorsed and handed out for all eleven (10) Pa Enea through the Pa Enea Brilliant Resilient Workshop for the Mayors and EO's August 2021. Brilliant Resilient Workshop- https://www.facebook.com/climatechangecookislands/posts/4353713754671468</p>

<p>Number of Geo Portal Officers trained on each island by Gender</p>	<p>No officers</p>	<p>A minimum of one on each island including equal number of women</p>	<p>Geoportal Training conducted in Q1-2021. User Manual for Geo Portal Use is developed and used for training in Q1 Y3 2021. There were 10 (8 women and 2 men) participants from Mangaia, Mauke, Mitiaro, Atiu and Aitutaki (Southern Group Islands). About 60% were employees of the respective Island governments and the other 40% were from the private sector, mostly self-employed. Over 50% of participants were women. DRM and COVID 19 Response Household Surveys were completed in Atiu, Aitutaki, Mauke, Mangaia, Mitiaro, Nassau and Palmerston in 2019 and 2020. It is also to be noted that some of the participants above also went through a similar training when the DRM surveys were carried out through the PEARL Project. As the DRM Survey was progressing through the Pa Enea, it was standard operational procedure to recruit surveyors as part of the survey team. This way, transfer of knowledge and technology use to the Pa Enea is established.</p>
<p>Develop user and administration manual for the GeoPortal</p>	<p>Number already trained – (baseline established at inception)</p>	<p>A minimum of 1 training workshop on each island including equal number of women</p>	<p>Workshop Training manual for Geo Portal administrations was developed and implemented at the Geo Portal Southern Group training conducted in January to February 2021. Participants were from the Pa Enea islands of Mangaia, Mauke, Mitiaro, Atiu and Aitutaki. The training manual was also utilized during the DRM Household Survey conducted in 2020 in the Northern Group islands of Manihiki, Rakahanga, Penrhyn and Pukapuka.</p>
<p>Number of new or existing drinking sources effectively managed for the basic water requirements during periods of drought</p>	<p>Existing Water Capacity for each Island as identified in the Island Profiles</p>	<p>20% increase in safe water over Baseline</p>	<p>New Water supply infrastructure have been added to the Pa Enea Rainwater harvesting systems; including 8 x 45,000l and 4x 20,000l -Aitutaki. 2 x 45,000 l - Mangaia, 8 x 6000l - Palmerston, 10 x 25,000 l PE Tanks Penrhyn; 2 x 45,000l Manihiki plus 5 x 45,000l Rakahanga to be lined. The total capacity provided and completed in the last year was 920,000 additional storage</p>

Number of communities that maintain safe drinking water supplies to meet basic needs at all times including during periods of drought			All 11 inhabited islands maintain safe drinking water systems and water filtration systems are increasingly being introduced to the islands especially with via the schools and centrally located community tanks systems
Number of Water Committees	None	Quarterly meetings	The Project committee in Rarotonga continues to oversee the project implementation working with the Island Councils and stakeholders to achieve project milestones as the island based project partners.
Number of rain gauges, rainfall harvesting surveys, water resources and storage assessments disaggregated by dataset included on the Geo Portal	% water systems complete to date (baseline established at inception)	Quarterly increase for each island	Rain gauge has been upgraded on all islands. Surveys and assessment on going Water tank monitoring equipment (IOTs) is currently being piloted on the islands of Aitutaki and will be rolled out to Atiu, Mangaia, Pukapuka, Manihiki and Penrhyn.
Number of reports available to decision makers on local monitoring and assessment information	Nil (baseline established at inception)	Quarterly increase for each island	Water Security and Drought Management Plans are available and have been discussed with the respective Communities on Mauke, Atiu, Mitiaro, Manihiki, Palmerston, and Pukapuka and with officials only for the Rakahanga Water security and Drought Management plans discussions were also held with the Council in Aitutaki as well. These plans were handed out to all islands at the Pa Enea Brilliant Resilient Workshop in August 2021 to Mayors and EO's of each of the 10 Pa Enea islands.

<p>Number of drought assessment methodologies developed and implemented and used</p>	<p>Nil (baseline established at inception)</p>	<p>At least one for the North and One for the South</p>	<p>Target 100% achieved as all 10 islands received Water Security and Drought Management Plans. These plans were handed out to all islands at the Pa Enea Brilliant Resilient Workshop in August 2021 to Mayors and EO'. Rain gauges are increasingly being installed on all the Pa Enea islands especially around the residential zones. This is to improve rainfall tracking. Water monitoring activities based on Water tank levels is stepping up via the use of IOTs on the islands are also ongoing. There is a need to strengthen the coordination in this area especially in terms of reporting and tracking consistence and timeliness. Of great importance is the need to streamline this into the operations of the Northern Island Government to help with the management of water resources on the islands</p>
<p>Number of these drought assessments methodologies being used to support local drought management plans</p>	<p>Nil (baseline established at inception)</p>	<p>At least one in the North and One in the south</p>	<p>Target 100% achieved as all 10 islands received Water Security and Drought Management Plans. These plans were handed out to all islands at the Pa Enea Brilliant Resilient Workshop in August 2021 to Mayors and EO's of each of the 10 Pa Enea islands. As the Plans are living documents they Works continue to be updated in coordination with the Pa Enea Island governments and key stakeholders. This will need to be continued to be strengthened.</p>
<p>Number of communities and agencies trained in coping with future water security threats</p>	<p>Nil (baseline established at inception)</p>	<p>Year on Year increase in trained communities and agencies for each island</p>	<p>Target 100% Achieved - Training on coping with water security threats have also been conducted with government workers and with communities and schools on Mangaia, Rakahanga, Manihiki, Pukapuka, Palmerston and Nassau.</p>
<p>Number of community level drinking water safety plans (dwsp) reviewed and updated and implemented</p>	<p>Nil (baseline established at inception)</p>	<p>All plans reviewed and updated by Year 3 of the project</p>	<p>The recently reviewed Water Security and Drought Management Plans mentioned above include in it components for, 1. Water development plan, 2. Water safety program as well as 3 the Drought Management plan in 1 document instead of separating these into 3 different working documents. These documents have been prepared for all the islands in the Pa Enea except for Nassau island</p>

<p>% coverage of Schools and island communities</p>	<p>% existing coverage of schools and communities (baseline established at inception)</p>	<p>100% coverage of Schools and Island Communities by Year 3 of the Project</p>	<p>Target 100% achieved. Additional work also include visiting island schools and running Rainwater Harvesting Training sessions with them. This was conducted for some Primary schools in the North; Manihiki - Tukao Primary, Pukapuka. Penrhyn - Omoka and Tetautua Primary schools and also in Aitutaki schools of Araura Primary and the SDA - Te Akaroa Primary school for example. In some island school student also attended the various community workshops and training sessions on drought management training and presentations, especially on the island of Atiu, Mauke and Mangaia. All schools in the Pa Enua received reusable water bottles to ensure access to safe and affordable drinking water and to increase the reliability and quality of water supplies in targeted areas. Mangaia island was the first pilot of the Pa Enua Schools Water Bottle Project and 80% of students are still using their bottles after 1 year. The Health department on the island and the school have also implemented a healthy living and drinking project in the school and monitor the use of the water bottles and contents. This is conducted throughout the year and the school has seen a decrease in single use plastic bottles and increase of 85% of water in the bottles. The other 15% is coconut water.</p>
<p>Number of proposals approved and implemented</p>	<p>Nil</p>	<p>Full utilisation of fund by Year 3 of the programme</p>	<p>Target 100% achieved. Fund was fully utilised. The call for Water Security Fund went out to the Pa Enua Island Governments for the submission of priority needs on each island. Priority needs have been assessed and work to address areas of concern in water security is being presented for implementation in a Project Design Document that was prepared to guide the use of the WS funds.</p>
<p>Number of irrigation system installed</p>	<p>Unknown. A priority for MoA to establish</p>	<p>One farm per island in Southern Group</p>	<p>Target is 100% Completed. 25 Farms in total, supporting all islands in the Southern Group.</p>

Displacement of island vegetables imports	Unknown. A priority for MoA to establish	50% of vegetable imports displaced in Northern Group	Target is 100% Achieved with Hydroponics in Manihiki, Pukapuka, Rakahanga, Nassau, Palmerston, and Penrhyn. Hydroponics is the second income earner for the Island Governments of Pukapuka and Manihiki providing fresh vegetables for the communities.
Fruit products sold in Rarotonga	Unknown. A priority for MoA to establish	33% rise in fruit products sold from Southern Group	Target is 100% Completed. Market Access and Supply Chain workshop and meetings were conducted with Buyer from Rarotonga to Mayors and EO's in 2021 at the Brilliant Resilient Workshop in August. Pa Enea Participants had the opportunity to meet one on one with buyers to discuss potential future export opportunities from their islands. .
Improved variety of staple crops	Unknown. A priority for MoA to establish	50% of planted crops have improved variety	Target Achieved and continued to be supported with Crop banks implemented in the Pa Enea and data being provided and uploaded to AgIntel. Crop banks have been established on each of the southern group islands holding climate tolerant varieties of yam (8 Teve, Aprika, sda yam, Sweet yam, Pacific yam, Etene, Parai and Toka), pineapple (3 Ripley Queen, Smooth Cayenne and MD2), bananas (7 Amoa Cavendish, Kings crown, Rokua, Mario, Ducasse, Utu, Ladyfinger) and taro (20 varieties i.e. Manaura, Manaura cross, veo, titi cross, rakahanga cross, papua) and kumara (4 orange, white, purple, yellow). Additional crops are now included in the crop bank such as ginger and turmeric.
Number of operating island nurseries	A priority for MoA to establish the number of existing nurseries?	One per island in the Pa Enea	Target 100% Achieved. All Pa Enea Islands either have nurseries or hydroponics. (Atiu, Aitutaki, Mauke, Mitiaro, Mangaia, Manihiki, Rakahanga, Nassau, Palmerston, Penrhyn and Pukapuka)
Number of nursery business plans	Nil (baseline established at inception)	All nurseries have business plans	Target 100% Achieved- 8 nurseries are now operating under the Pa Enea Island governments' business plan in partnership with the Ministry of Agriculture.

Production capacity utilisation of island nurseries	Unknown. A priority for MoA to establish existing production capacity	75% production capacity utilised per nursery	Target is 100% Completed with nurseries operating at 75% production capacity. Ministry of Agriculture has signed an MOU with island governments and are working in partnership with them to provide technical support and advice and is also included in the Agriculture Act 2021. Link to Hydroponic display at Career Expo 2022 by MOA with over 400 students' participation https://www.facebook.com/photo/?fbid=387727260046984&set=pb.100064291405585.-2207520000
Operating costs recovery	Unknown. A priority for MoA to establish existing operating costs	100% of operating costs recovered	100% Achieved. All farmers that books their seedlings at the nursery are required to pay a fee and also for fruit trees
Number of operating school gardens	Two	One per school in Northern Group	Target 100% Achieved- 6 of the Northern Group Islands have School Gardens (Manihiki, Pukapuka, Rakahanga, Nassau, Palmerston and Tongareva) Niua School in Pukapuka has worked with MOA and the island government on Home Gardens and also works in partnership with the Hydroponics. 2021 school garden kits and additional support has been provided for sustainability of the school gardens. School gardens have also been strengthened on the islands of Mauke, Atiu, Aitutaki and Mangaia in 2021 working directly with the Islands Governments, MOA and Pa Enuu Schools. Food cubes were also purchased for the School gardens for each of the Northern Group to support the school gardens in planting vegetables and herbs. Due to COVID shipping delays the remaining equipment/materials are pending on domestic cargo boats schedules to the islands. (3x each for the islands Palmerston, Nassau, Pukapuka, Rakahanga. Manihiki and Penrhyn received 6x 3 for each school. Approximately 24 Food cubes)

<p>Number of students by gender taught science, social science and health & wellbeing units using school garden</p>	<p>Nil (baseline established at inception)</p>	<p>50% of school population annually</p>	<p>Target 100% Achieved- Raurau Akamatutu Workshop has worked with the schools in the Pa Enea in the PEARL Project and will continue to do so in on each of the Pa Enea. The PEARL project will build on all this workshops/capacity building for our schools and work with Island Governments and directly with the schools on the islands to continue to support partners for sustainability and Knowledge Materials. Link to Hydroponic display at Career Expo 2022 by MOA with over 400 students' participation MOA continues to provide hands-on training and awareness to students at MOA, School Gardens and with Agriculture Island Officers. https://www.facebook.com/photo/?fbid=387727260046984&set=pb.100064291405585.-2207520000. Agriculture has also provided all schools in the Northern and Southern Group with training tool kit/posters on seedling sowing, staking plants, and pruning and transplant seedlings.</p>
<p>Number of orchard with technical support</p>	<p>Two</p>	<p>12 orchards assisted in Southern Group</p>	<p>Target 100% Achieved. A total of 16 orchard, 1x community plantation in Mitiaro and 35 farmers are being assisted in the southern group since 2019, funded by PEARL, however there are still areas that needs strengthening for each orchard to ensure sustainability and MOA will continue to work in partnership with the Island Government, Island Agriculture Departments and beneficiaries to build capacity.</p>
<p>Number of community tree management plans implemented</p>	<p>Nil (baseline established at inception)</p>	<p>One per island in Southern Group</p>	<p>Target 100% Achieved - Aitutaki, Mangaia, Mauke, Atiu and Mitiaro have completed the tree management plans in 2019/2020/2021. Tree Management manual was updated and focused on citrus and pawpaw. Crapo Calendars were also available for farmers.</p>

<p>Productivity of orchards</p>	<p>Unknown</p>	<p>50% productivity improvement in the Southern Group</p>	<p>Target 100% Achieved- Total of 51 Suppliers provide produce to Prime Foods in 2021. Data was collected from the Market Access Report #2 in partnership with Prime Foods. Gender Participation of Suppliers – 39% of the Suppliers are Female and 61% are Male. Market Access and Supply Chain workshop and meetings were conducted with Buyer from Rarotonga to farmers on Aitutaki, Mangaia and Pukapuka in 2021. There has been 90 types of produce supplied by the Cook Islands local producers during this reporting period. Previously reported in email on December 16th 2020, 31 Types of Produce were supplied locally. The increase in variety of herbs, fruits and added value produce and sourcing of more locally grown produce and less imported produce has increased the access and demand of variety of produce. Current report also includes Rarotonga suppliers.</p>
<p>Number of island integrated in AgIntel</p>	<p>Nil</p>	<p>11 islands</p>	<p>Target 100% Achieved - Southern Group islands are all providing data to the AgIntel. Quarterly reports are uploaded for 2018, 2019 on the MOA website. Northern Group data was collected and will be uploaded to the MOA website. Communications for data collection, ongoing training and feedback is difficult with the remote islands in the North. To assist with communications zoom equipment will be procured for the northern group islands through the government ICT Division out of the Office of the Prime Minister. Link to site - https://agriculture.gov.ck/corporate-services/agintel-report/</p>

<p>Number of Pa Enea farmers using E-Agriculture information</p>	<p>Nil</p>	<p>50% of Pa Enea farmers</p>	<p>Target 100% Achieved. MOA has also conducted farmers training workshop on each of the islands. Market Access and Supply Chain meetings/workshops have been conducted on the islands of Aitutaki (over 40 participants), Mangaia (97 participants) and Pukapuka (130 participants) in 2020. MOA has also conducted workshops with farmers on Rarotonga. Communications for data collection, ongoing training and feedback is difficult with the remote islands in the North. To assist with communications zoom equipment will be procured for the northern group islands through the government ICT Division out of the Office of the Prime Minister.</p>
<p>Number of proposals approved and implemented</p>	<p>Nil</p>	<p>Full utilisation of fund by Year 4 of the programme</p>	<p>Target 100% achieved. Fund was fully utilised. - Economic Resilience Fund is currently in Procurement Stage. 165 applicants were received from all islands in the Pa Enea. 35 beneficiaries were selected. Equipment is currently being procured. Procurement will be completed by Y3 June 2021.</p>

5. **Issues, challenges and mitigation measures** (Environmental and social risks, gender considerations and other risks) – *Please refer to the lessons learned tab in the PPR, specifically the section on “Implementation and Adaptive Management”*

Identified Risk	Current Status	Steps Taken to Mitigate Risk
Meeting the expectations of the Communities to implement projects but there is insufficient budget	Medium	<p>Component 1, 2 and 3 consultations were all impacted with communities and stake holders during 2022 from travel bans due to COVID-19 increased cases in several islands, at times communication was conducted virtually with additional cost for equipment setup and support zoom/phone/tablets/computers communications. - https://www.facebook.com/climatechangecookislands/posts/pfbid02PBMeYsnJYrQEzxfiMWy65HNI8ysXVAEPegK4VLDXQ1DPeqFRAY7fF1UX75pE7AVI¹</p> <p>COVID -19 continued to affect/impacted the procurement and delivery of some materials in all Components especially in Component 2 and 3 with increased cost of consultations/workshops & training/materials/equipment /freight/transport.</p> <p>Travel - the availability of regular airline flights/boat charter and Pa Enea Travel Restrictions & Ministerial Travel Bans required delays in travel. With Travel Bans due to COVID-19 restrictions, airline flights/boat charters were disrupted whereas the only means of travel to the Pa Enea, especially the northern group Islands of Penrhyn, Manihiki, Pukapuka were chartered flights, Rakahanga Nassau and Palmerston were boat charters - with high airline charter/boat charter cost, Southern Group travel to Mitiaro, Mauke, Atiu, Aitutaki and Mangaia have also been impacted by COVID-19 travel bans/restrictions and incurred additional costs.</p> <p>To mitigate this risk, the project team implemented a cost-sharing strategy with other components of the project and also with other government agencies. COVID-19 also impacted on delivery of materials/equipment due to transportation delays from international cargo freight and domestic cargo schedules i.e. delivery of agriculture equipment for northern and southern group (rotary, garden tools, brush chipper for mulching).</p>
Finance personnel is unable to meet financial commitments and targets as defined in the work plan	Low	Processing and reconciliation of financial transactions with bank statements by the NIE Finance Manager - DCD, MFEM.

¹ <https://covid19.gov.ck/> (Te Marae Ora - Ministry of Health, 2022)

Travel costs exceed the budget to meet Northern Group commitments and activities	Medium	Cost sharing travelling cost with other PEARL Project Partners and Government Department were preferred for cost recovery, complete project deliveries and implementation. COVID -19 continued to affect/impacted the travel across all Components to the Pa Enea and increased cost of materials/equipment/freight/transport Travel - the availability of regular airline flights/boat charter and Pa Enea Travel Restrictions & Ministerial Travel Bans required delays in travel, additional cost was incurred to Per Diems/Accommodation/Transport i.e. Pa Enea Mayor & EO's Brilliant Resilient Workshop August 2021.
Economic Resilient and Water Security Fund requests exceed available budget	Low	Respective Island Governments, Councils and beneficiaries were engaged in 2022 with PMU and partners to strengthen the delivery of the Projects and reporting. During the Pa Enea Mayors & EO's Brilliant Resilient Workshop, islands met with PEARL Project supporting Agencies, suppliers and service providers of equipment/materials for the Water Security Fund and Economic Resilient Fund.
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	Medium	Project related grievances follow the Grievance Redress Mechanism as per the PEARL Project Document (p127-128). If during contract execution the Project Coordinator and Component Coordinators CCCI-EE cannot resolve the conflict at the operating and executing level, the matter must be escalated and addressed by the MFEM-NIE; Tarai Vaka has a mediation process that will be implemented. If the Project Coordinator and Component Coordinators cannot resolve the conflict at the executing level, the matter must be escalated and addressed by the MFEM-NIE; Te Tarai Vaka Activity Management System has a mediation process that will be implemented as per the Grievance Redress Mechanism (refer to the PEARL Project Document on page 127 & 128).
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.	Low	System to manage this is in place plus forward planning by Outputs and progress reporting on a quarterly basis.
Misappropriation of Project Funds	Medium	Flag to internal audit team of MFEM, Annual audits as well as spot check audits will be enforced during project implementation.
Not able to contract suitable Project	Low	Project Management team for the PMU established. PEARL Project PMU Admin Clerk was hired to support the PMU.

Management team for the PMU		
Poor collaboration between programme partners	Medium	Ongoing meetings with key stakeholders are conducted weekly, monthly and quarterly (Platform Meetings)
Island Government disputes the role of the PMU in Rarotonga and declines implementation of activities	Low	Ongoing communication with Island Governments and Communities is key to managing potential disputes.
Disputes over who should drive the projects on island and the competing interests of various stakeholders	Medium	The project will be driven through the Local Government Channels to avoid local interests groups but if well consulted and issues addressed properly it should not be a problem.
Limited human resources in Government ministries and agencies to contribute to the activities.	Medium	We will address the HR issues island by island depending on the local capabilities and enter into an agreement for the sub projects. Training Pa Enea staff to maintain and install water utility will continue through ICI and its other projects as this is no longer possible due to the ending of PEARL project. I.e. Manihiki Community Water Tanks.
The government is no longer supportive, politically and financially, of a cross-sectoral and integrated approach to the management of climate risks and opportunities.	Low	This is not a risk at this stage and ongoing communication is key to all stakeholders.

<p>Communication, access and community coordination difficulties delay timely implementation of the planned programme activities at the target community level. Communication costs exceed budget allocation.</p>	<p>Low</p>	<p>This is not a risk at this stage and ongoing communication is key to all stakeholders. Communication and Awareness has exceeded all targets for 2022 through social media, print media, radio and images. Link to some stories - Career Expo Capacity Building https://www.facebook.com/climatechangecookislands/posts/pfbid027FDnh8rWXNADgfa3tAYehT7bkcCbGNqCVDsjq62xYFSitd2WkqucNduuQi4A7i2RI Component 1 - https://www.facebook.com/climatechangecookislands/posts/pfbid02Ny8DgBFYaANWC3zfykaZjUTVvCVXBaUy1aS26AGSyZmsjm6VXwYKdaMMqzdVqWKYI Component 2 https://www.cookislandsnews.com/uncategorised/new-water-tanks-for-manihiki/ , Component 3 https://www.facebook.com/climatechangecookislands/posts/pfbid0rTA4ZYGAVEYbP6Nxo81fmKAxroRoYezD7UF8aaavTH1Zu5osd4GRMDPNw2nYxHh8l</p>
<p>Operational - Transportation due to only one shipping service in the first 2 years of the Project</p>	<p>Medium</p>	<p>A new shipping service started in December 2020</p>
<p>Prolonged drought led to severe water shortage on the island of Penrhyn in Jan 2021</p>	<p>Low</p>	<p>The PEARL Project procured water maker unit and ICI will continue to provide upskilling and training to the Island Government on Penrhyn on the operations and maintenance of the equipment.</p>

6. **Lessons learned** (Best practices, adaptive management, what worked during the implementation and what did not, what corrective actions were taken during implementation, what are the ways to improve the intervention) – *Please refer to the lessons learned tab in the PPR, specifically the section on “Implementation and Adaptive Management”*

Implementation and Adaptive Management	
<p>What implementation issues/lessons, either positive or negative, affected progress?</p>	<p>Specialist' reports on the incorporation of the Gender & ESS in to Project implementation to date were useful in helping to strengthen the project progress reports with the relevant indicators. The Monitoring and Evaluation Specialist's review of the project also highlighted some gaps in the implementation and reporting processes to be addressed, PMU - PEARL Project is tracking well with 100% overall target achievement. COVID 19 impeded on delivery of equipment, materials and transportation. However the Project team were still focused on target completion. Component 2: Shipping was a main issues for the Water project even towards the end of the project causing delays in getting some of the materials to the islands on time. Components of the projects especially the training related to the construction of 20kl tanks and repairs to some 45kl tanks could not be completed during the designated period as the funds were short. Some materials were delayed due to shipping to the mainland Rarotonga from overseas and re-ship to the destination on the outer islands. Component 3: Shipping was a main issues for delays to materials being shipped/air freighted to Pa Enea due to COVID-19 international shipping delays/equipment and materials shortages.</p>
<p>Were there any delays in implementation? If so, include any causes of delays. What measures have been taken to reduce delays?</p>	<p>COVID-19 impeded on delivery of equipment, materials and transportation. Some equipment (i.e. hydroponics/School Garden materials/School Garden Shed/ Food Cubes equipment were delayed due to offloading of cargo and or delays from international shipping which then impedes on domestic shipping. Some islands only have shipping every 3 to 4 months. Flights have also had to be chartered in 2020 and 2021 due to COVID-19 Pa Enea boarder travel restrictions. Some delays for equipment were over 9 months due to international delays. Measures taken to reduce delays was to work with suppliers locally and internationally and communications.</p> <p>Most community based actives were implemented as designed The activities under Water Security Fund grant fund were changed especially in the concrete mold supply to Palmerston as well additional water tanks being repaired and constructed in Aitutaki</p>

<p>Describe any changes undertaken to improve results on the ground or any changes made to project outputs (i.e. changes to project design)*</p>	<p>Component 3 - Market Access/Supply Chain and Farmer Direct training with Rarotonga Buyer (Prime Foods Retail store) has increased the produce of exported vegetables and fruits from the Pa Enea especially from Aitutaki, Mangaia, Mauke, Atiu, Palmerston and Pukapuka. Other Food retailer (CITC) is also purchasing produce from the Pa Enea. There has been a huge interest in purchasing vegetables and fruits from the Pa Enea growers. This has had a huge positive impact in the Pa Enea and encouraged more women farmers to export and youth to participate in agriculture. In Aitutaki, two women farmers and a family were affected by COVID-19 travel ban on the tourism industry and had to diversify their business. They were beneficiaries of the AF Project and expanded their domestic business on Aitutaki to Rarotonga with Prime Foods. Link - https://www.facebook.com/climatechangecookislands/posts/4492173680825474 and https://www.facebook.com/climatechangecookislands/posts/4492270427482466</p> <p>Most community based activities were implemented as designed The activities under Water Security Fund grant fund were changed especially in the concrete mold supply to Palmerston as well additional water tanks being repaired and constructed in Aitutaki</p> <p>No changes undertaken at this point to change project design although recommendations to improve the Results Framework and uniformity of definitions used have been noted from the endorsed PEARL Project Monitoring and Evaluations Report 2021 and 2022.</p>
<p>Have the environmental and social safeguard measures that were taken been effective in avoiding unwanted negative impacts?</p>	<p>Proposed recommendations of findings by the G&ESS and M&E Specialists were presented to the EE agencies to strengthen the implementation of the final phases of the Project. Limited negative impacts on environment and the pa enua communities. Economic Resilient Fund and Water Security Funds applications were vetted and Gender, Environmental and Social Safeguard considerations were taken in to account. All project activities take into account ESS and Gender. The minimum use of local sand for the concrete works for water tank repairs and construction activities were encouraged and most physical works involve people from the island themselves</p>

<p>How have gender considerations been taken into consideration during the reporting period? What have been the lessons learned as a consequence of inclusion of such considerations on project performance or impacts? List lessons learned specific to gender, detailing measures and project/program me-specific indicators highlighting the role of women as key actors in climate change adaptation.</p>	<p>The gender consideration in the project was pretty consistent. This is from works on the island as well as those that were involved in the community training activities as well. Training works in communities and local institutions where everyone is asked to participate fully (men or women). The PEARL Project will continue to empower Gender, Youth and the most vulnerable in Y3 2021 of the project. Link to the Media Release from Component 1 and 3 highlights gender leadership, capacity building and youth engagement in the PEARL Project. Link - https://www.cookislandsnews.com/internal/national/environment/recently-installed-automatic-weather-stations-in-northern-group-aim-for-more-accurate-forecasts/ Women farmer participation has increase on each of the Pa Enea with ERF and Orchard support provided directly to beneficiaries. https://www.facebook.com/climatechangecookislands/posts/4492173680825474, https://www.facebook.com/climatechangecookislands/posts/4492270427482466, Report on Pa Enea Domestic Export Report #2 showed 51 suppliers to Prime Foods and 39% of the Suppliers are Female and 61% are Male. Import Substitution – Prime Foods now imports 15 types of produce from the Pa Enea rather than from overseas. Component 2 - Partnership with TAU with water monitoring of community tanks. Link - https://www.facebook.com/taui.cookislands/posts/274410391415308, https://www.facebook.com/taui.cookislands/posts/273737428149271, https://www.facebook.com/taui.cookislands/posts/273120278210986</p>
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Climate Resilience Measures

<p>What have been the lessons learned, both positive and negative, in implementing climate adaptation measures that would be relevant to the design and implementation of future projects/programmes for enhanced resilience to climate change?</p>	<p><i>Mid Project Term:</i> Climate resilience interventions should be adapted to each specific location (e.g. each island in the Pa Enea) and not a one solution fits all. The recent increase in risks associated with shipping schedule and shortage in materials supplies (worldwide) from overseas meant a number of activities were not able to be implemented and completed on time. This is a serious problem which will continue to impact upcoming projects as well.</p> <p><i>End of Project Term:</i> Coordination of intelligence, technical know-how between the executing agencies and collaborative planning of adaptive activities to climate change is crucial to a collaborative outcome across the Project. For example: Hydroponic garden in drought prone islands require reprogramming of gardening to their wet seasons, the procurement of the water desalinator plant may also aid during the drought prone times.</p>
<p>What is the potential for the climate resilience measures undertaken by the project/programme to be replicated and scaled up both within and outside the project area?</p>	<p><i>Mid Project Term:</i> There is a possibility of climate resilience measures to be replicated and scaled up but at this point we are still to clearly identify which of the measures would provide the most impact and be sustainable.</p> <p><i>End of Project Term:</i> This can be done provided the financial resources are given to extend this to the required islands. There is a possibility of climate resilience measures to be replicated and scaled up the small grants, water monitoring, enhanced traditional food security practices/crops these measures would provide the most impact and be sustainable as they are at the community level. i.e. Pukapuka Traditional Food Security practices still being observed, practices and preserved, as their livelihoods depends on those practices due to isolation and limited resources.</p>
<p>Concrete Adaptation Intervention Lessons</p>	

<p>What have been the lessons learned, both positive and negative, in implementing concrete adaptation interventions that would be relevant to the design and implementation of future projects/program mes implementing concrete adaptation interventions?</p>	<p><i>Mid Project Term:</i> Climate resilience interventions should be adapted to each specific location (e.g. each island in the Pa Enea) and not a one solution fits all. For example, while hydroponics may be suitable for other islands, historical drought records indicates that water shortage occurs on a particular island every year. These historical data and knowledge should be taken into account when planning project activities and its relevance for each location.</p> <p><i>End of Project Term:</i> Increase adoption and use of 20kl concrete water tanks for both community and residential water storage purposes across all the atoll islands will be replicated under a new project. Also completions of the remaining un-repaired community water catchment buildings will need to be replicated and completed for those islands who still have these yet to repair their water buildings</p>
<p>What is the potential for the concrete adaptation interventions undertaken by the project/programme to be replicated and scaled up both within and outside the project area?</p>	<p><i>Mid Project Term:</i> There is a possibility of climate resilience measures to be replicated and scaled up but at this point we are still to clearly identify which of the measures would provide the most impact and be sustainable.</p> <p><i>End of Project Term:</i> The replication of this project is highly likely to be increased under a new Water Scarcity project in the pipeline.</p>
<p>Community/National Impact Lessons</p>	
<p>What would you consider to be the most successful aspects for the target communities?</p>	<p>A number of community water tanks have been repaired or delivered to the islands including a water catchment building in Manihiki. About 7 more mains to be completed.</p> <p>Agriculture Data has shown an increase of farmers by 48% (AgIntel 2020) from 2018 to 2019 resulting in increased production in 2019 when compared to the previous years of 2017 and 2018. There was an increase of 0.5% of local produce within two quarters from 2018 to 2019 in the five Islands and is expected to increase more.</p>
<p>What measures are/have been put in place to ensure sustainability of</p>	<p>We have also discussed and included these as part of the Island communities water assets which will be managed by the island government especially in terms of managing the distribution of the water harvested and stored in the tanks as well as in maintaining these water infrastructure for the community</p>

the project/program results?	
What measures are being/could have been put in place to improve project/program results?	Encouraging and working with the Council and Island Government to ensure the overall water harvesting systems require careful and continuous monitoring to ensure the guttering are in place to maintain effective rainwater capture and harvesting while advocating for the effective maintenance of the water assets
Knowledge Management Lessons	
How has existing information/data /knowledge been used to inform project development and implementation? What kinds of information/data /knowledge were used?	<p>Information and water data were used to justify why the Water Security Fund should focus on the atoll islands. This is because in terms of risks exposure the atoll islands have higher exposure to dry spell risks. This allowed us to adopt and conduct similar water infrastructure repairs and support activities across the 7 atoll islands DRM Information and Communications strengthened with the procurement and training of Satellite Phones for each of the Pa Enea and Rarotonga for communications in the event of disasters in partnership with Red Cross and EMCI. https://www.facebook.com/profile/100064291405585/search/?q=satellite</p> <p>Installation of AWS/AWOS on each of the islands provided real time climate data for Emergency management response in natural disasters and Pandemics. Historical climate data of the Cook Islands and in the Pacific inform planning and implementation of the Water Security Fund in determining the most suitable options for water catchment and storage. These historical data were sourced from the national Met Office and regional agencies (Pacific-Australia Climate Change Science and Adaptation Planning Programme Partners).</p> <p>The ArcGIS platform will continue to be the technology to operate the Geoportal and as a repository for geographical data warehousing and dissemination. Collaboration of data across all Government Agencies.</p>
Has the existing information/data /knowledge been made available to relevant stakeholder? If so, what channels of dissemination have been used?	Infrastructure Cook Islands delivered a number training sessions around the climate change risks and the relationships and connections to water supply shortages. Rainwater Harvesting Training sessions were held with the pa enua communities as well as in the schools. Information relayed by Climate Change through workshops (Raurau Akamatutu - Basket of Resilience).

<p>Please list any knowledge products generated and include hyperlinks whenever possible (e.g. project videos, project stories, studies and technical reports, case studies, training manuals, handbooks, strategies and plans developed, etc.)</p>	<p>Component 1 - * Disaster Risk Management Training Materials * ArcGIS geo-portal Training Materials * Geoportal at https://ckgov.maps.arcgis.com</p> <p>* Media releases on project stories highlighting trainings and implementation timelines are done on a regular basis (see links below): Early Rainfall Watch update for North pfbid02tPkYmGVeCmFMUg3hSzWb2bp9P7pDD56fM7HynTwMvXCKKNJnG6MAnYQ7QjnVeWcPI .Workshop with 30 participants was also support for understanding rainfall and being better prepared with Cook Islands Met Services in March. Career Expo Capacity Building https://www.facebook.com/climatechangecookislands/posts/pfbid027FDnh8rWXNADgfa3tAYehT7bkcCbGNqCVDsjq62xYFSitd2WkqucNduuQi4A7i2RI Component 1 - https://www.facebook.com/climatechangecookislands/posts/pfbid02Ny8DgBFYaANWC3zfykaZjUTVvCVXBaUy1aS26AGSyZmsjm6VXwYKdaMMqzdVqWKYI Component 2 https://www.cookislandsnews.com/uncategorised/new-water-tanks-for-manihiki/ , Component 3 https://www.facebook.com/climatechangecookislands/posts/pfbid0rTA4ZYGAVEYbP6Nxo81fmKAxroRoYezD7UF8aaavTH1Zu5osd4GRMDPNw2nYxHh8I Link - https://www.cookislandsnews.com/national/weather/understanding-rainfall-and-being-better-prepared/ https://www.cookislandsnews.com/outer-islands/singer-enlists-atiu-teens-to-monitor-climate-crisis/ https://www.cookislandsnews.com/outer-islands/growing-to-survive-and-thrive-in-the-pa-enua/ https://www.cookislandsnews.com/outer-islands/supporting-pa-enua-farmers/ https://www.cookislandsnews.com/outer-islands/500k-for-water-system-developments/ https://www.cookislandsnews.com/outer-islands/encouraging-locally-grown-fresh-produce-on-tongareva/ https://www.cookislandsnews.com/national/outer-islands/smart-farming-technology-for-palmerston-and-nassau/ https://www.cookislandsnews.com/internal/national/environment/recently-installed-automatic-weather-stations-in-northern-group-aim-for-more-accurate-forecasts/ https://www.cookislandsnews.com/weather/keeping-an-eye-out-for-unexpected-turn-of-events/ https://www.cookislandsnews.com/internal/national/local/pa-enua-upskilling-in-disaster-management/ https://www.cookislandsnews.com/internal/national/local/building-confidence-through-training/ https://www.cookislandsnews.com/national/outer-islands/new-technology-for-household-surveys-on-rakahanga/ https://www.cookislandsnews.com/internal/national/technology/upskilling-youth-through-technology-based-surveying/ https://www.cookislandsnews.com/internal/national/outer-islands/pm-unveils-food-security-initiative-on-mitiaro/</p>
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	<p>Component 2 - Water Security and Drought Plans. Banners, Reports and Water Monitoring tools in partnership with TAUI ltd. Workshop materials i.e. presentation and media release. Link - Component 2 TAUI Partnership for Water Tank Monitoring - https://www.facebook.com/climatechangecookislands/posts/4724206720955501</p> <p>Tree Management and Water Strategies - https://www.facebook.com/climatechangecookislands/posts/4236830269693151</p> <p>Component 3 AgIntel data collection from all Pa Enea islands, tree management handbooks, school seedling information training flyers/posters, arapo calendars and technical reports, . Banners, Reports and Workshop materials i.e. presentation and media release. Link - Component 3 Aitutaki Beneficiary Orchard Goodway Farm https://www.facebook.com/climatechangecookislands/posts/4677986332244207</p> <p>Aitutaki Woman farmer ERF beneficiary Nane Porea Aitutaki Hydroponics https://www.facebook.com/climatechangecookislands/posts/4492173680825474</p> <p>Aitutaki Beneficiaries site visits - https://www.facebook.com/climatechangecookislands/posts/4287137284662449</p> <p>Tree Management & Water Strategies https://www.facebook.com/climatechangecookislands/posts/4236830269693151</p> <p>https://www.facebook.com/climatechangecookislands/posts/4200181156691396</p> <p>Official Handover of the Mitiaro Hydroponics (400 plant capacity hydroponic) https://www.facebook.com/climatechangecookislands/posts/4051981871511326</p> <p>https://www.cookislandsnews.com/internal/national/outer-islands/pm-unveils-food-security-initiative-on-mitiaro/</p> <p>Mangaia ERF Recipients - https://www.facebook.com/climatechangecookislands/posts/4039671639409016</p> <p>Tongareva Hydroponic First Harvest March - https://www.facebook.com/climatechangecookislands/posts/3938245416218306</p>
<p>If learning objectives have been established, have they been met? Please describe.</p>	<p>Learning objectives have been successfully implemented through workshops and targeted training activities, dissemination of information both around climate change and project objectives and outcomes. Knowledge materials are also distributed to stakeholders at workshops and trainings for future reference. A very important Water tank construction training implemented with construction training activities on two tanks identified for Manihiki and was implemented Feb 2022.</p>

<p>Describe any difficulties there have been in accessing or retrieving existing information (data or knowledge) that is relevant to the project. Please provide suggestions for improving access to the relevant data.</p>	<p>The Project team and local government agencies have close working relationships with local, regional and international partners to access information required for the Project. E.g.: These historical data around rainfall, tropical cyclones, temperature and sea-level rise was sourced from National Agencies (Met Office) and also regional agencies (Pacific-Australia Climate Change Science and Adaptation Planning Programme Partners).</p> <p>However crucial historical data has been difficult to access for some of the baseline information. Campaigns raising awareness of the Project to stakeholders and the public have also assisted to access or retrieve information there is through recollections, personal records and knowledge.</p> <p>Recommendations: central repository of national intelligence</p>
<p>Has the identification of learning objectives contributed to the outcomes of the project? In what ways have they contributed?</p>	<p>It has brought out the general understanding around climate change impact and the risks associated with its resources and infrastructures. New approaches and intel around interpreting data and climate change impacts needs to be promoted in the communities so they also understand their role and engage in building a resilient and adaptive community.</p>

7. **Innovation:** description of any innovative practices or technologies that figured prominently in this project

The use of tablets to collect data and information on Disaster Risk Management household surveys enabling live data uploads to the Geoportal. Previously, this information is collected using paper-based forms, tabulated in spreadsheets and then entered into the Geoportal post survey. The process is time consuming and inefficient. This left room for human input errors and delays in providing updated information. The use of tablets and live updates have minimised this risk and ensured the consistency of the data uploaded. One other feature is that the app can be used offline for those areas with no internet connectivity.

Installation of water efficient irrigation systems on farms to help save water

Crop banks have been established on each of the southern group islands holding climate tolerant varieties of yam, pineapple (3), bananas (5) and taro.

8. **Description of the vulnerable communities and social groups affected by the project, and how they have been engaged and empowered**

The improved collection of data with installed AWS completed on the remote and hard to access islands of Suvarrow and Nassau were completed through the PEARL Project. The

updated household surveys on all inhabited islands of the Pa Enea highlighted the vulnerable members of society for the DRM and Response Plans.

Increased Water harvesting through the revival of old water wells and additional storage tanks for the drought prone island of Penrhyn and procurement of the water desalination unit.

Component 3 - expanded food security with the setup and capacity development of subsistence and school gardens including the hydroponic gardens, commercial farming assistance through the Economic Resilience Fund.

9. Description of how long-term institutional and technical capacity for effective adaptation has been strengthened – Please refer to the lessons learned tab, section on “readiness interventions”

Not applicable – NIE did not receive readiness grant

10. An overview of complementarity and/or coherence of with other climate finance sources in the context of this project (synergies with other projects, national plans etc.) – Please refer to the lessons learned tab, section on “complementarity and coherence”.

The Pa Enea Action for Resilient Livelihoods (PEARL) project builds directly on the results of the SRIC programme including lessons learnt from the reports and assessments carried out during SRIC project implementation. The PEARL Project have also integrated the water infrastructure projects of SRIC in water modelling to assess water system resilience of each island. The PEARL Project also considered the impact of SRIC projects and output of the Agriculture Food Security and Nutrition Resilient strategy in assessing food security and economic resilience and adopted the lessons learned for the set-up of the Economic Resilience Fund.

11. Sustainability, scalability and replicability – Please refer to the lessons learned tab, section on “climate resilience measures”

The replication of this project is highly likely to be increased under a new upcoming - Water Scarcity project

Replication and scale up for the small grants (ERF & WSF)

Enhanced traditional food security practices such as Pukapuka’s Traditional Food Security practices due to isolation and limited resources. Report Raurau Akamatutu on Pukapuka highlights this. Link to Pukapuka visit - <https://www.facebook.com/climatechangepookislands/posts/3595422337167284>

The supply of vegetables from the hydroponics are now available regularly to the island community and is part of the Island Administration’s business plan to maintain the system ensuring sustainability and food security for their communities.

The identification and training of Field surveyors (mainly unemployed youth) has helped continue the engagement of local human resource in the collection of information (DRM surveys) in timely in more efficient manner.

The utilisation of technology, smart devices, to conduct Island wide surveys increased the efficiency of the survey itself and processing that survey data up to the Geoportal for analysis and reporting. The project will continue to use smart devices for island wide Surveys. In 2020 more emphasis was placed on capacity and resilient building for CC and DRM.

The ArcGIS platform will continue to be the technology to operate the Geoportal and as a repository for geographical data warehousing and dissemination.

The completion of the AWS installation for the northern group has improved our capability in monitoring meteorological events which influences global climate change.

Section B: Project expenditure

ITEM / ACTIVITY / ACTION	YEAR 1			YEAR 2			YEAR 3			YEAR 4		
	PROJECTED COST	ACTUAL AMOUNT	Variance	PROJECTED COST	ACTUAL AMOUNT	Variance	PROJECTED COST	ACTUAL AMOUNT	Variance	PROJECTED COST	ACTUAL AMOUNT	Variance
Component 1	\$81,212.13	\$101,314.86	(20,102.72)	\$ 227,353.57	\$135,202.11	92,151.46	\$ 293,237	\$ 287,398.95	5,838.08	\$ 5,210	\$ 3,723.05	1,486.91
Component Administration	31,808.25	37,738.13	(5,929.88)	30,856.50	17,728.64	13,127.86	61,771.24	61,666.22	105.02			0.00
Output 1.1.1	24,210.34	33,690.61	(9,480.27)	62,707.27	29,209.29	33,497.98	96,167.10	79,677.31	16,489.79	5,209.96	3,723.05	1,486.91
Output 1.1.2	226.72	268.95	(42.23)	10,491.21	10,312.93	178.28	22,925.12	22,885.08	40.04			0.00
Output 1.2.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00
Output 1.2.2	0.00	0.00	0.00	6,857.00	0.00	6,857.00	7,300.00	9,669.95	(2,369.95)			0.00
Output 1.2.3	0.00	0.00	0.00	26,717.74	45,859.20	(19,141.46)		16,902.51	(16,902.51)			0.00
Output 1.3.1	2,657.20	3,152.13	(494.93)	22,628.10	4,620.01	18,008.09	20,807.86	22,047.86	(1,240.00)			0.00
Output 1.3.2	22,309.62	26,465.04	(4,155.41)	40,730.58	14,657.58	26,073.00	55,543.18	44,670.78	10,872.40			0.00
Output 1.3.3	0.00	0.00	0.00	26,365.17	12,814.46	13,550.71	28,722.53	29,879.24	(1,156.71)			0.00
Component 2	98,501.69	116,853.97	(18,352.28)	323,600.35	213,834.10	109,766.25	405,042.93	385,824.04	19,218.89	15,153.67	8,132.17	7,021.50
Component Administration	24,114.94	28,611.87	(4,496.93)	25,782.32	13,676.83	12,105.49	35,529.30	30,333.84	5,195.46	1,908.82	1,684.89	223.93
Output 2.1.1	21,461.13	25,458.50	(3,997.37)	30,856.50	21,793.27	9,063.23	40,498.89	28,295.36	12,203.53	12,099.73	5,302.16	6,797.57
Output 2.1.2	0.00	0.00	0.00	274.28	0.00	274.28	876.00	874.95	1.05	0.00		0.00
Output 2.1.3	40,808.10	48,409.06	(7,600.96)	16,539.77	31,536.28	(14,996.51)	10,799.38	10,691.86	107.52	0.00		0.00
Output 2.2.1	0.00	0.00	0.00	30,493.08	15,248.68	15,244.40	13,801.15	13,801.00	0.15	0.00		0.00
Output 2.2.2	9,646.42	11,443.17	(1,796.75)	7,542.70	0.00	7,542.70	3,413.17	3,395.37	17.80	0.00		0.00
Output 2.2.3	2,239.88	2,657.09	(417.20)	40,412.42	500.56	39,911.86	65,601.80	86,059.46	(20,457.66)	1,145.12	1,145.12	0.00
Output 2.3.1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Output 2.3.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00

Output 2.3.3	231.21	274.28	(43.07)	274.28	0.00	274.28	601.72	514.28	87.45	0.00		0.00
Output 2.3.4	0.00	0.00	0.00	171,425.00	131,078.48	40,346.52	233,921.52	211,857.92	22,063.60	0.00		0.00
Component 3	201,465.10	239,658.23	(38,193.13)	417,356.11	277,252.23	140,103.88	719,819.54	669,296.53	50,523.01	49,051.74	39,942.93	9,108.81
Component Administration	23,918.84	28,379.26	(4,460.42)	18,513.90	16,863.71	1,650.19	32,575.03	23,878.98	8,696.05	8,596.21		8,596.21
Output 3.1.1	6,377.71	8,228.40	(1,850.69)	8,228.40	9,653.77	(1,425.37)	8,397.83	6,959.09	1,438.74	1,407.34	894.74	512.60
Output 3.1.2	36,647.56	43,473.57	(6,826.01)	0.00	18,014.71	(18,014.71)	29,543.28	11,628.70	17,914.58	0.00	0.00	0.00
Output 3.1.3	59,789.19	70,925.59	(11,136.39)	62,346.59	55,268.57	7,078.02	14,214.29	30,541.16	(16,326.87)	1,313.64	1,313.64	0.00
Output 3.2.1	5,142.99	6,100.93	(957.94)	0.00	3,184.42	(3,184.42)	41,288.65	19,665.36	21,623.29	21,254.87	21,254.87	0.00
Output 3.2.2	46,106.45	54,694.28	(8,587.83)	0.00	58,070.79	(58,070.79)	222,508.93	222,421.54	87.39	0.00	0.00	0.00
Output 3.2.3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Output 3.3.1	4,729.48	5,610.40	(880.92)	12,342.60	7,452.19	4,890.41	26,357.41	0.00	26,357.41	0.00	0.00	0.00
Output 3.3.2	6,673.31	7,916.29	(1,242.98)	0.00	2,249.10	(2,249.10)	967.61	1,748.54	(780.93)	0.00	0.00	0.00
Output 3.3.3		0.00	0.00	137,140.00	79,921.69	57,218.31	66,078.31	81,059.15	(14,980.84)	0.00	0.00	0.00
Output 3.3.4		0.00	0.00	68,570.00	0.00	68,570.00	73,000.00	111,990.38	(38,990.38)	0.00	0.00	0.00
Output 3.4.1	11,279.52	13,380.45	(2,100.93)	15,313.74	11,190.62	4,123.12	13,388.92	0.00	13,388.92	4,327.67	4,327.67	0.00
Output 3.4.2	568.83	674.78	(105.95)	5,142.75	0.00	5,142.75	15,750.22	1,668.31	14,081.91	6,387.33	6,387.33	0.00
Output 3.5.1		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Output 3.5.2		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Output 3.5.3	231.21	274.28	(43.07)	274.28	0.00	274.28	601.72	600.67	1.05	0.00	0.00	0.00
Output 3.5.4		0.00	0.00	89,483.85	15,382.66	74,101.19	175,147.34	157,134.66	18,012.68	5,764.68	5,764.68	0.00
Component 4	132,921.45	123,768.49	9,152.96	155,356.99	78,286.31	77,070.68	294,855.59	166,441.29	128,414.30	134,579.32	53,049.26	81,530.06
Implementing entity oversight cost	70,342.47	69,761.24	581.23	73,141.56	48,750.17	24,391.39	115,818.59	88,117.74	27,700.85	71,660.09	35,390.41	36,269.68
Project Execution Cost	62,578.98	54,007.25	8,571.73	82,215.43	29,536.14	52,679.29	179,037.00	78,323.55	100,713.45	62,919.23	17,658.85	45,260.38
TOTAL	514,100.36	581,595.55	(67,495.18)	1,123,667.02	704,574.75	419,092.27	1,712,955.09	1,508,960.81	203,994.28	203,994.69	104,847.41	99,147.28

Section C:



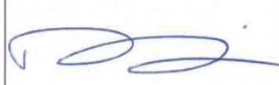





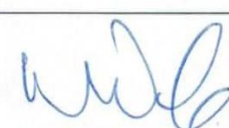
Appendix 1: Participants list of an inception workshop






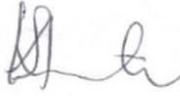


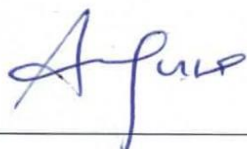




Attendance Sheet

Inception Workshop Thursday, December 6th, 2018 Venue – USP

#	Name	Company/ Department	Email Address	Signature	Gender	
					M	F
1	Teariki Vakalalabure	BTIB CEO	teariki.vakalalabure@cookislands.gov.ck	<i>apologises</i>	<input checked="" type="checkbox"/>	
2	Louisa Porea	BTIB	louisa.porea@cookislands.gov.ck	<i>[Signature]</i>		<input checked="" type="checkbox"/>
3	Celine Dyer	CCCI	celine.dyer@cookislands.gov.ck	<i>[Signature]</i>		<input checked="" type="checkbox"/>
4	Melina Tuiravakai	CCCI – PEARL PMU	Melina.tuiravakai@cookislands.gov.ck	<i>[Signature]</i>		<input checked="" type="checkbox"/>
5	Fletcher Melvin	Chamber of Commerce (President)	fletcher@islandcraft.co.ck	<i>[Signature]</i>	<input checked="" type="checkbox"/>	
6	Arona Ngari	Cook Islands Metrological Services Director	aronangari@cookislands.gov.ck	<i>apologises</i>		
7	Fine Arnold	Cook Islands Red Cross President	afine@redcross.org.ck	<i>apologises</i>		

					M	F
8	Metua Vaiimene	Cook Islands Tourism Director	metua.vaiimene@cookislands.gov.ck	apologises		
9	Tessa Vaetoru	DCD	tessa.vaetoru@cookislands.gov.ck			✓
10	Krystina Tatuava	DCD	krystina.tatuava@cookislands.gov.ck			
11	Lavinia Tama	DCD (MFEM) Manager	lavinia.tama@cookislands.gov.ck			✓
12	Mani Mate	PEARL NIE	mani.mate@cookislands.gov.ck			✓
13	Mia Teaurima	PEARL NIE	mia.teaurima@cookislands.gov.ck			✓
14	Tatiana Paulo	PEARL NIE	Tatiana Paulo <tatiana.paulo@cookislands.gov.ck			
15	Lydia Sijp	EMCI Cook Islands Civil Society	lydia.sijp@cookislands.gov.ck			✓
16	Timoti Tangirua	EMCI - PEARL	timoti.tangirua@cookislands.gov.ck			✓
17	Charles Carlson	EMCI (OPM) Director	charles.carlson@cookislands.gov.ck			
18	Bruce Corbett	ICI	bruce.corbett@cookislands.gov.ck			✓

19	Wilson Rani	ICI	wilson.rani@cookislands.gov.ck			
20	Gareth Clayton	ICI	gareth.clayton@cookislands.gov.ck			
21	Tenga Mana	ICI	tenga.mana@cookislands.gov.ck			
22	Diane Charlie-Puna	ICI - HOM	diane.puna@cookislands.gov.ck			✓
23	Taukea Raui	ICI - PEARL	taukea.raui@cookislands.gov.ck			✓
24	Pua Hunter	ICT (OPM) Director	pua.hunter@cookislands.gov.ck			✓
25	Anne Herman	Internal Affairs HOM	anne.herman@cookislands.gov.ck			
26	Jacqui Evans	Marae Moana Director	jacqui.evans@cookislands.gov.ck			✓
27	Temarama Anguna	Ministry of Agriculture HOM	temarama.anguna@cookislands.gov.ck			✓
28	John Hosking	Ministry of Transport HOM	john.hosking@cookislands.gov.ck			
29	Otheniel Tangianau	Pa Enea Governance (OPM)	otherniel.tangianau@cookislands.gov.ck			✓

M L

					M	F
30	Reboama Samuel	Pa Enuu Governance (OPM)	reboama.samuel@cookislands.gov.ck	apdogises		
31	Kelvin Passfield	TIS	kelvin.passfield@gmail.com	KP	/	
32	Takili Tairi	MoA		Tairi	/	
33	Teina Ringi	MoH		Teina		/
34	Melinda Pierre	MFem		Melinda		/
35	Roe Tupu	BTIB	roe.tupu@cookislands.gov.ck	Roe		/
36	Tu Bale Vakalalabure	BTIB		Tu Bale	/	

Appendix 2: Key project staff list

	MFEM NIE
Name:	Ms Emily Pierre-OaAriki
Title:	NIE National Program Manager
Agency:	Development Coordination Unit, MFEM
Name:	Ms Tatiana Paulo
Title:	NIE / PEARL Project Finance Manager
Agency:	Development Coordination Unit, MFEM
Name:	Mr Mani Mate
Title:	NIE National Program Manager (former)
Agency:	Development Coordination Unit, MFEM
	Executing Entities
Name:	Ms Melina Tuiravakai
Title:	Project Coordinator, PEARL Project Management Unit
Agency:	Climate Change Cook Islands, Office of the Prime Minister
Name:	Ms Verena Nia
Title:	Administration Clerk, PEARL Project Management Unit
Agency:	Climate Change Cook Islands, Office of the Prime Minister
	Executing Agency Partners
Name	Mr Timoti Tangiruaie
Title:	PEARL Project Component 1 Coordinator
Agency:	Emergency Management, Office of the Prime Minister
Name	Mr Otheniel Tangianau
Title:	PEARL Project Component 2 Coordinator
Agency:	Infrastructure Cook Islands
Name	Mr Wilson Rani
Title:	PEARL Project Component 2 Coordinator
Agency:	Infrastructure Cook Islands
Name	Mr Taukea Rau
Title:	PEARL Project Component 2 Coordinator (former)
Agency:	Infrastructure Cook Islands
Name	Mr Takili Tairi
Title:	PEARL Project Component 3 Coordinator
Agency:	Ministry of Agriculture
Name	Ms Puna Kamoe
Title:	PEARL Project Component 3 Assistant
Agency:	Ministry of Agriculture