

CONCEPT IDEA NOTE FOR THE GREEN CLIMATE FUND

Title of Concept/Project Idea: Pa Enuā Water Sector Security and Resilience Programme

Date of Submission

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Submitted by and Contact
and

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<p>Indicate the areas for the Concept, which is based upon the CKI Country Program thematic areas</p>	<p><u>Mitigation:</u> Reduced emissions from:</p> <ul style="list-style-type: none"><input type="checkbox"/> Energy access and power generation<input type="checkbox"/> Low emission transport<input type="checkbox"/> Buildings, cities and industries and appliances<input type="checkbox"/> Forestry and land use <p><u>Adaptation:</u> Increased resilience of:</p> <ul style="list-style-type: none">X<input type="checkbox"/> Most vulnerable people and communitiesX<input type="checkbox"/> Health and well-being, and food and water securityX<input type="checkbox"/> Infrastructure and built environmentX<input type="checkbox"/> Ecosystem and ecosystem services
<p>Indicative total project cost</p>	<p>Amount: NZD 12,000,000</p>

The rationale, objectives and approach of the Pa Enea water sector programme

The Cook Islands, particularly the Pa Enea, are extremely vulnerable to both slow and fast-onset events as a result of climate changes. This vulnerability is intensified by current socio-economic, infrastructure and environmental pressures. The Pa Enea require assistance in developing and implementing strategies and practical measures, including management, human and physical infrastructure, to be able to deal with these changes. Key to assisting the communities on the Pa Enea is the climate secure provision of water supply and the associated sanitation investments. The climate changes currently being experienced, and increased extreme events predicted, expose the islands to regular droughts and resultant water shortages. Inadequate sanitation, both water borne and solid waste, intensifies the impacts by reducing the available water sources for community use.

The objective of the proposal is to build on and expand the existing water security programmes, completed or underway, to ensure these efforts are concretised and established to be sustainable as well as to expand infrastructure delivery. This project will have two components:

- Reduce vulnerability by climate proofing communities through the provision of physical infrastructure, and
- Strengthen the existing institutions, through human resources and policy development, sourcing and managing technical capabilities

The implementation approach is to integrate this work into the national water sector institutional structure established for the existing programmes and to expand on these programme systems and capacities to deliver the climate change driven needs of the water sector in the Pa Enea.

The implementing partners for this work are represented on the water sector committee and include Office of the Prime Minister; Climate Change Cook Islands and Pa Enea Governance Unit, Ministries of Financial and Economic Management and Health, National Environment Service, Emergency Management Cook Islands, Enea Governments and Communities (including the private sector), Infrastructure Cook Islands, Red Cross. The executing entity will be Infrastructure Cook Islands.

Context and baseline

Climate vulnerabilities and impacts

The climate of the Cook Islands is sub-tropical to tropic oceanic, moderated by trade winds. It is largely determined by the latitudinal shift of the South Pacific Convergence Zone (SPCZ). The SPCZ usually lies between the two main island clusters (Northern and Southern Islands) of the Cook group. This and the wide latitudinal separation between the two groups makes the current climate of the two island groups different.

There are mainly two seasons affecting these islands with a hot and relatively humid period from November to April and a warm, relatively dry period from May to October. The more humid period is associated with the presence of the SPCZ over the islands. The drier period occurs when the SPCZ moves north and the weather is predominantly affected by the south-east trade winds.

In the Northern Cook Islands, higher rainfall periods are normally associated with El Niño episodes and dry periods are normally associated with La Niña episodes. This trend is opposite to that in the Southern Cook Islands, where droughts are normally associated with El Niño episodes and above average rainfall is normally associated with La Niña episodes.

Changes in climatic conditions such as rising temperatures and increased rainfall variability are making both direct and indirect contributions to human misery across the islands, through impacts on natural resources and systems that support human health and livelihoods thus increasing vulnerability. Increased variability of rain systems combined with rises in temperature and rising sea levels impacting salinity also create uncertainty around water resources availability both in terms of ground water resources and rainwater harvesting potential. Therefore the overall goal of the project will be to reduce the vulnerability of islands to the impact of these conditions and increasing the resilience of the community as well.

Adaptation needs that the prospective intervention is envisaged to address

While there are adequate water available on the Pa Enea under normal and average conditions, a combination of the lack of water conservation practices, management and community incentives to repair infrastructure and the inadequacy in the level of supporting water infrastructure and systems, all combine to contribute to increase water borne risks to the island communities. Improvements and development of alternative supply system for sanitation purposes, water quality and operational efficiency improvements need to be combined with water conservation, emergency supply security and institutional strengthening. With Climate change risks are expected to continue into the future and building community resilience to these changing conditions is an important mechanism and tool for managing the potential adverse impacts on the human health and livelihoods. These programs should focus on infrastructure and asset re

These programmes will focus on infrastructure and asset rehabilitation and improvement, development of alternative supply system for sanitation purposes, water quality and operation efficiency improvements, water conservation, emergency supply security and institutional strengthening.

Cook Islands National Sustainable Development Plan 2016-2020 “Te Kaveinga Nui”

The NSDP consists of 16 national development goals that aim to sustainably develop the Cook Islands and advance the well-being of its peoples and environment. The activities in this proposal are planned to achieve and complement the following national goals:

- Goal 4: Sustainable management of water and sanitation,
- Goal 5: Build resilient infrastructure,
- Goal 7: Improve the health and lifestyles of its people,
- Goal 10: Achieve security and improved nutrition,
- Goal 13: Achieve food security to combat the impacts of climate change and natural disasters.

Joint National Action Plan (JNAP) - A sectoral approach to Climate Change and Disaster Risk Management 2016 - 2020

The collaborative strategic matrix to strengthen climate and disaster resilience includes:

- Strategy 2: Water and food security
- Strategy 8: Climate and disaster risk management
- Strategy 9: Health and welfare

Main barriers that need to be addressed.

Social, Gender, Fiscal, Regulatory, Technological, Financial, Ecological, Institutional

The approach of the programme is to build on what has been supported previously, but critically, to establish a proper framework for ongoing water sector support to the Pa Enea. This will involve or attend to a multi-sector approach, improve coordination's and clarifications of roles, allow for replication and upscaling of programs across the islands, the provision of efficient technical support, island based solutions, capacity and organisation to formally deal with land matters and community buy in. The programme activities will thus include:

- Using and expanding the organisational arrangements for the PEARL programme thus resulting in a sector-wide water management capability.
- Strengthening the capacities of both Infrastructure Cook Islands and the Island Governments to deliver water management systems, drought management and responses.
- Water resource management plans, ground water extraction policy and protection and migrating policies into water supply and sanitation standards along with preparing water masterplans for the islands (unique in each case as the islands are in themselves unique.)
- Designing and implementing water demand management on the islands with particular emphasis on metering and management responses, water losses, integrated systems. Water conservation training and technologies.
- Water projects to improve drinking water supply and storage, reticulated water to provide household cleaning water and agricultural water. Associated household sanitation improvements to protect the stressed and limited water resources, recycling to productive use. Investigation, design, implementation. Irrigation potential with appropriate technologies.
- Water desalination options study to include into emergency management and masterplans.

Key characteristics and dynamics of the water sector in the Cook Islands

The water sector in the Pa Enea is characterised by the isolation, distances, lack of capacity and small, and diminishing, populations which exist. The water market is an integrated combination of private, community and government activities due to the isolation and distances involved. All local capacities are utilised in water management to various extents.

Numerous stakeholders etc confusion lack of capacity unclear mandates and policy confusion

Engagement among relevant stakeholders

This concept idea has been prepared under the aegis of the national Water Committee which consists of the range of institutions with mandates in the water sector. Furthermore the concept idea approach leading to a full scale programme preparation is a coronation and programme development initiative managed by Climate Change Cook Islands of the Office of the Prime Minister as the National Designated Authority. and MFEM as the Accredited Entity

Concept is development into a funding proposal

The further development of this concept into a fundable programme will demand continual engagement and collaboration between the sector stakeholders. This will be achieved at various levels: overall guidance by the national Water Committee, the water technical advisory committee. Dedicated capacity will be sourced to develop this concept further and this capacity will report to the water committee. The final programme will be the output of the national sector and will be finalised by a consultant-led workshop of all stakeholders. Preparation funding support will be required for this stage.

Programme exit strategy

Longterm programme sustainability

A key aspect of this programme is the development of sustainable integrated water management systems, operation and maintenance systems establishment and training of Island Government staff and local communities in the running of the island monitoring and information infrastructure and schemes. The systems will include regular day-to-day management, disaster response, information collection and sharing resulting in sustained water security, resilience and response to improve the longterm livelihoods of the people on the Pa Enea.

Key to this sustainability objective is a project to establish a water management unit within Infrastructure Cook Islands to co-ordinate, monitor and assist the Pa Enea Governments, and other sector stakeholders, with an Integrated Water Resource Management system for the islands.

Rather than establishing this institutional setup as an “add on” the project the intention is to integrate its establishment, capacity building and operationalisation in parallel to the projects implementation with the net result that at the end of this project this water setup will have been created and capacitated to provide sustainable, longterm overall management arrangements for the water sector in the Pa Enea. Monitoring lterm

Due to the extreme isolation of the various islands these arrangements must integrate public, private and community interests, infrastructure and capabilities to optimise and build on available resources and not be a simple engineering implementation arrangement.

Grant instrument rationale

This programme can only be supported by grants due to the extremely limited extent of economic activity on the Pa Enea which prevents any chance of financial cost recovery initiatives. Government and community contributions will however be in the form of active participation in project implementation and on-going management. The Cook Islands have committed to climate change adaptation on condition of international funding of the interventions.

Assessed By and Date:

Recommendation:

Cost estimate: 5-year programme (assuming a 5-year programme) (BC)	Total NZD
1. Preparation of full water sector programme proposal (BC)	\$ 100 000
2. Programme Implementation	
Management and planning	
Programme management ICI: NZD 210 000 p.a. x 5 (BC)	\$ 1 050 000
Masterplans 10x Island Governments NZD 100 000x10 (BC)	\$ 1 000 000
Water security programme: \$500 000 p.a. x 5 (BC SRIC-CC)	\$ 2 500 000
Metering and demand management (Southern Group) \$50 000x5 - all linked to physical reticulation improvements	\$ 250 000
Community and household tanks - refurbish and new:	
Aitutaki residential tanks stage 3 32 no. (BC)	\$ 40 000
Aitutaki residential tanks 221 (OD)	\$ 400 000
Atiu community tanks 20 no (OD)	\$ 300 000
Mangaia community tanks 10 no (OD)	\$ 150 000
Mauke community tanks 10 no (OD)	\$ 150 000
Mitiaro community tanks 10 and 4 new	\$ 210 000
Palmerston 4 new (OD)	\$ 150 000
Nassau 0 new (OD)	\$ 150 000
Pukapuka community tanks 6x (OD)	\$ 90 000
Pukapuka new 10 no (OD)	\$ 90 000
Penrhyn new 8 (Omoka and Tetautua (OD)	\$ 120 000
Manihiki 55 residential, 12 community, 4 new Tukao and Tauhunu(OD)	\$ 550 000
Rakahanga 6 new (OD)	\$. 90 000
Reticulation:	
Atiu restoration water supply 221 no. (GC)	\$ 420 000
Atiu: Maramou well upgrade (various) (GC and OD)	\$ 180 000
Aitutaki water upgrade feasibility studies (OD)	\$ 400 000
Aitutaki Tautu demand management (BC)	\$ 20 000
Aitutaki new gallery (OD and BC)	\$ 400 000
Mangaia groundwater development Oneroa (OD)	\$ 350 000
Atiu gallery (OD)	\$ 500 000
Mauke pump rehabilitation (OD)	\$ 180 000
Aitutaki integrated water system improvements (OD)	\$1 000 000
Northern islands groundwater development c/w demand management	\$ 500 000

Desalination

Desalination potential study (BC)	\$ 20 000
Trail desalination plant 100 people (BC)	\$ 75 000
Mobile desalination plant renovation (Red Cross) (BC)	\$ 20 000

Sanitation

Solid waste support (BC)	\$ 250 000
Sanitation trial and subsidy Aitutaki (BC)	\$ 250 000
Sanitation trial and support Manihiki (BC)	\$ 100 000
Total programme implementation estimate	\$ 11 955 000
Total programme preparation estimate	\$ 100 000