

## CONCEPT IDEA NOTE FOR CLIMATE RELATED ACTIVITIES THAT MAY BE FUNDABLE BY THE GREEN CLIMATE FUND AND OTHER FINANCIAL SOURCES

This Concept Idea Note is based upon the GCF Concept Note. It is designed to prepare any Concepts or Project Ideas with GCF financing in mind, however, can also be applicable to other financial institutions. Once the Concept Idea Note is completed please send to the CCCI office (as the GCF National Focal Point), where an assessment will be undertaken as to whether the Concept could be eligible for funding under the GCF or other financial source, or both. CCCI will then communicate the result of the assessment back to the proponent, and outline what will next happen to the Concept Idea Note, such as require more information to make a clearer assessment, the submitted Concept is GCF eligible for funding and the next steps, or a determination that outlines the Concept is not eligible for GCF funding but may get funding from another source.

**Title of Concept OR Project Idea: Water Security for Northern Islands Project**

**Date of Submission: 24 OCTOBER 2018**

**Submitted by and Contact: Stephen Lyon**

<p><b>Indicate the areas for the Concept, which is based upon the CKI Country Program thematic areas</b></p>	<p><u>Mitigation</u>: Reduced emissions from:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Energy access and power generation</li> <li><input type="checkbox"/> Low emission transport</li> <li><input type="checkbox"/> Buildings, cities and industries and appliances</li> <li><input type="checkbox"/> Forestry and land use</li> </ul> <p><u>Adaptation</u>: Increased resilience of:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Most vulnerable people and communities</li> <li><input checked="" type="checkbox"/> Health and well-being, and food and water security</li> <li><input checked="" type="checkbox"/> Infrastructure and built environment</li> <li><input type="checkbox"/> Ecosystem and ecosystem services</li> </ul>
<p><b>Indicative total project cost</b></p>	<p>Amount: NZD 2,000,000.00</p>

**Project/Programme rationale, objectives and approach of programme/project (max 100 words)**

Climate change is bringing about unpredictable and more severe periods of drought to our northern atolls. These islands still rely on rainwater for their water supply, including water for human consumption.

Therefore during periods of low rainfall the islands risk water shortages, and mitigation in the short term has included shipping up bottled water, and in the medium term, is through the building of more storage tanks or upgrading existing facilities.

Technology is now at the point where desalination powered by integrated solar is available for a relatively low cost, capable of supplying potable water for our northern communities without relying on rainfall.

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**Context and baseline (max. 2 pages)**

*Describe the climate vulnerabilities and impacts, GHG emissions profile, and mitigation and adaptation needs that the prospective intervention is envisaged to address.*

*Please indicate how the project fits in with the country's national priorities and its full ownership of the concept. Is the project/programme directly contributing to the country's INDC/NDC or national climate strategies or other plans such as NAMAs, NAPs or equivalent? If so, please describe which priorities identified in these documents the proposed project is aiming to address and/or improve.*

*Describe the main root causes and barriers (social, gender, fiscal, regulatory, technological, financial, ecological, institutional, etc.) that need to be addressed.*

*Where relevant, and particularly for private sector project/programme, please describe the key characteristics and dynamics of the sector or market in which the project/programme will operate.*

**Priority linkages**

This project aligns to the Cook Islands Country Programme for Climate Change in the following areas;

Programmatic Area 3: Water security

Programmatic Area 6: Climate Proofing Infrastructure

Programmatic Area 3 has a specific output, the exploration of water desalination as an option. This proposal goes further than exploration and seeks to implement desalination across our Northern island communities. Programmatic Area 6, while not directly related, does discuss infrastructure, which would include water infrastructure.

This project aligns to the Cook Islands National Sustainable Development Plan's following goals and indicators.

Goal 4. Sustainable management of water and sanitation.

Indicator 4.1 – Percentage of population with access to sufficient and safe water in their homes.

Goal 15. Ensure a sustainable population engaged in development of Cook Islanders for Cook Islanders;

Indicators 15.1 – Support a sustainable population

## **Overview and Context**

The Northern Group Islands (and Palmerston) are extremely vulnerable to climate impacts, both through storm damage, sea level rise and drought. Ground water as a water resource for consumption is non-existent and these communities rely solely on collected rain water for drinking water.

The impacts of climate change are already being felt in these highly sensitive communities. Drought has been a real event over 2018 and bottled water has been shipped to some of our northern communities in order to provide relief.

There has also been significant investment in improving collection and storage of rainwater through various projects over the past 3 years. However this will not completely resolve the issue given that droughts are forecast to intensify in the face of climate change.

Therefore the Cook Islands Country Plan rightly identifies investigation of desalination as a priority area.

Technology has developed to the stage where desalination can be achieved off a closed system run on self generating solar power. There is no need to plug into the grid, although grid powered systems are also available.

This project has identified a self contained, solar powered, containerized solution that is capable of producing up to 5000L of potable fresh water every day. If this amount of water is not needed the system can either continue to create water for storage or put excess energy back to the grid.

The project proposes to deploy one of these units to each of our atoll communities, including 2 on Tongareva, 1 on Rakahunga, 2 on Manihiki, 2 on Pukapuka, 1 on Nassau and 1 on Palmerston. A total of 9 units.

These units have an expected life of 10 to 20 years. Therefore replacement of these units is well within the budget allocation of each island council for water security.

## **Development and Delivery Concept**

Once approved the project will work with the supplier to ensure the units built are fit for purpose for the Cook Islands environment. Island governments will be consulted with as to the receiving, location and ongoing management of these units. An analysis will be undertaken for each location to ascertain whether the units are to be connected to the current solar grid (suitable if there is an excess of production) or developed with their own standalone power generation.

The units will be commissioned and delivered as a unit, and shipped to their respective communities. A key local government representative will be trained in their management and maintenance.

The economic model to ensure the units can be maintained is developed with central government concurrent to the implementation of the project.

Timeframe: 12 Months

Cost: 2,000,000.00

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## **Engagement among the NDA, AE, and/or other relevant stakeholders in the country (max ½ page)**

*Please describe how engagement among the NDA, AE and/or other relevant stakeholders in the country has taken place and what further engagement will be undertaken as the concept is developed into a funding proposal.*

The need for desalination and water security has been identified as a key deliverable. This idea has been presented to the NDA as part of a Northern Group resilience project.

It is expected this project will require further consultation and guidance to be developed into a full proposal.

The size of this project indicates it may be better bundled with other projects in the same thematic or geographic area.

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**Sustainability and replicability of the project (exit strategy) (max. 1 page)**

*Please explain how the project/programme sustainability will be ensured in the long run and how this will be monitored, after the project/programme is implemented with support from the GCF and other sources.*

*For non-grant instruments, explain how the capital invested will be repaid and over what duration of time.*

Long term sustainability is essential for this project as potable water is a key part of community infrastructure. It is suggested here that concurrent to this project, policy is developed at the national level to ensure island governments are upskilled to monitor and maintain these units, and that a maintenance and replacement programme is built into the islands long term budget planning processes.

Another approach will be to include a funding component for private sector contracting of the maintenance and replacements of these units.

Either option will help ensure sustainability of this project in the long term.

**Assessed By and Date:**

**Recommendation:**