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Green Climate Fund Proposal

Adapting the Regional Roadmap for Sustainable Pacific Fisheries and New Song to climate change

Introduction

1. The Green Climate Fund (GCF) was established by the United Nations Framework Convention on Climate Change to assist developing countries mitigate greenhouse gas emissions and adapt to the effects of climate change. The priorities for investments in adaptation by GCF are:
 - a. Enhanced livelihoods of the most vulnerable people, communities, and regions
 - b. Increased health and well-being, and food and water security
 - c. Resilient infrastructure and built environment to climate change threats
 - d. Resilient ecosystems
2. Importantly, at least 50% of adaptation funding goes to the least developed countries (LDCs), small island developing states (SIDS), and African States. Of the 37 projects approved so far (worth \$1.5 billion), five are being implemented in Pacific Island countries.

3. Grants are made to *Accredited Entities* and *Executing Entities* for up to to six years. One of the important conditions is that proposals must include an exit strategy demonstrating how the benefits of the investment by GCF will continue after the conclusion of the grant. Conservation International, which is an Accredited Entity, and SPC which will be an Executing Entity, have discussed the considerable advantages to Pacific Island countries (PICs) of an application to the GCF to ‘climate-proof’ the components of the *Regional Roadmap for Sustainable Pacific Fisheries* and the *New Song for Coastal Fisheries* that depend on the region’s tuna resources.
4. More broadly, this proposed investment is aligned with the *Framework for a Pacific Oceanscape*, which seeks to ensure that climate change adaptation is incorporated into sustainable development, conservation and governance actions. Importantly, the *Roadmap*, *New Song* and *Pacific Oceanscape* have been endorsed by all Pacific Island Forum Leaders. This strong, unified direction was reaffirmed in the Leaders’ *Pohnpei Ocean Statement (2016)* as guiding policies and actions to implement SDG 14 in the region.
5. The purpose of this brief paper is to explain the rationale for the proposal, the key activities/investments, and the steps involved in preparing a full proposal for GCF.

Rationale

6. Tuna underpins many of the socio-economic benefits that SPC members derive from fisheries. Tuna fishery access fees from distant water fishing nations make major contributions to the government revenue of several PICs, more than 22,000 fulltime jobs have been created through processing tuna and on tuna fishing vessels, and tuna is increasingly important in providing fish for local food security. The *Roadmap* outlines plans to increase these benefits. The *New Song* also maps out the steps required for small-scale coastal fishers to harness increased benefits from tuna for food security and livelihoods.
7. The comprehensive assessment of the vulnerability of tropical Pacific fisheries to climate change co-ordinated by SPC identified the implications of climate change for the socio-economic benefits derived from tuna, and the adaptations needed to reduce the risks and capitalise on the opportunities. These priority adaptations are summarised in SPC Policy Brief 24/2014 *Pacific Island Fisheries and Climate Change*. Adaptations for artisanal and industrial tuna fisheries now need to be implemented at scale to ‘climate-proof’ several of the strategies required to achieve the goals of the *Roadmap* and the *New Song*.
8. The GCF provides an important opportunity to implement several of the recommended adaptations related to tuna, particularly those aimed at increasing access of coastal and urban communities to tuna for food security. It also provides the opportunity to fill outstanding gaps in the information needed to place all types of tuna fishing on a more sustainable basis. Key aspects of the proposal include (i) a focus on tuna as a critical resource for Pacific Island countries, (ii) linking modelling, actions, and monitoring changes to improve adaptations, (iii) a phased approach, and (iii) involvement of the public and private sectors.

Key activities/investments

9. The proposed request for support from GCF will focus on three main types of activities/investments related to tuna: those aimed at small-scale coastal fisheries, those associated with the industrial tuna fishery, and some cross cutting investments (see Table 1).
10. The investments for coastal fisheries will scale-up implementation of FAD programmes across the region – something that is recognised as a win-win adaptation because it not only promises to make more fish available for rapidly-growing coastal communities now, it will also provide a more reliable way of catching fish as coral reefs and coastal fisheries are progressively degraded by climate change. Transferring some fishing effort to FADs will also reduce pressure on reefs, helping them to adapt to climate change. Investments will include development of systems to replace FADs lost to cyclones quickly, ‘train the trainer’ programmes to ensure small-scale fishers learn to fish around FADs safely and effectively, and the roll out of simple post-harvest methods to increase the shelf life of catches made around FADs.
11. Investments associated with oceanic fisheries will fill important gaps in knowledge about the spatial structure of tuna stocks and how these stocks and the supporting ecosystem are likely to respond to climate change and ocean acidification. This information will assist SPC members to achieve the goals of the *Roadmap* by minimising the risks posed by climate change and maximising the opportunities.
12. Investments in monitoring will enable SPC members to assess the success of the measures taken to increase access to tuna for local food security, plan future investments appropriately, and equip policy makers with the information needed to adapt management approaches and measures to ensure optimum outcomes.
13. Investments in confirming maritime boundaries, assessing the role of large fisheries exclusion zones in management of tuna stocks, and identifying opportunities for private sector involvement will inform and underpin future management of tuna fisheries and efficient operation of fishing fleets.
14. The monitoring, and information for future management, will allow SPC members to pursue the most beneficial adaptations at the conclusion of the GFC grant.

Preparing a full proposal for GCF

15. Preparing a full proposal for GCF is a three-stage process. For those SPC members interested in being included in the activities/investments planned for the joint Conservation International – SPC proposal to GCF, the first step will be to obtain support for the submission of a concept note from their National Designated Authority (NDA). The second step involves Conservation International and SPC preparing a GCF Concept for the project, using the proforma provided by GCF, and submitting it through the NDAs to the GCF Secretariat. Finally, if the GCF Concept is recommended for further development, there is the task of preparing the full proposal for submission through the NDAs. Development of the full proposal would be co-led by Conservation International SPC, and participating countries, using funds available from GCF for this purpose.

Table 1. Key activities/investments to be included in the proposal to the Green Climate Fund. GCF Priority 1) Enhanced livelihoods of the most vulnerable people, communities, and regions; 2) Increased health and well-being, and food and water security; 3) Resilient infrastructure and built environment to climate change threats; 4) Resilient ecosystems.

Coastal Fisheries Adaptations					
Activity/Investment	Rationale	GCF priority			
		1	2	3	4
<p>➤ Install nearshore FADs in PICs to improve infrastructure for food security</p> <p><u>Requirements:</u> Determine a schedule for installing FADs in different PICs. Supply FAD materials for PICs and appoint Fisheries Development Officers to CFP to co-ordinate deployment of FADs in PICs</p>	<p>➤ Provide increased access to fish (tuna) for coastal communities in PICs with rapidly-growing populations as the productivity of coastal demersal fisheries declines as increased sea surface temperatures and ocean acidification degrade the coral reefs that currently provide much of the fish consumed locally.</p>	✓	✓		
	<p>➤ Transfer some small-scale fishing effort from coral reefs to tuna to reduce the stress on coral reef ecosystems, allowing them to harness their natural (autonomous) capacity to adapt to ocean warming and acidification.</p>				✓
<p>➤ Training in safe and effective FAD-fishing methods</p> <p><u>Requirements:</u> ‘Train the trainer’ programmes for coastal communities so that they receive thorough training in how to fish safely and effectively around FADs. Procurement of boating safety grab bags for communities.</p>	<p>➤ Many of the small-scale fishing operations in PICs providing fish for food security are based around coral reefs. Because FADs usually need to be placed several km from the coast, small-scale fishers visiting FADs need to be made aware of the increased risks to their safety, and how to reduce these risks through the use of appropriate safety practices and equipment. They will also often need training in new ways of fishing to catch fish associated with FADs effectively.</p>	✓	✓		
<p>➤ Climate-proofing FAD infrastructure so that it can be replaced rapidly following cyclones</p> <p><u>Requirements:</u> Supply of cyclone-proof containers with spare FAD materials, and micro-credit schemes for replacement/repair of boats and fishing gear lost during cyclones</p>	<p>➤ Strong cyclones (e.g. TC Pam in Vanuatu and TC Winston in Fiji) cause such dislocation, and often loss of national shipping, that it can take unacceptably long times to order and install FADs after the natural disaster. This problem can be overcome by installing 40’ shipping containers on cyclone-proof footings at several locations within a country to store spare FAD materials and some boats so that FADs can be installed shortly after the cyclone has passed.</p>	✓	✓	✓	
<p>➤ Post-harvest processing of tuna when large catches are made around FADs to extend shelf-life of the excess catch for future use or sale</p> <p><u>Requirements:</u> Staff to train coastal communities in simple methods for preserving tuna, such as sun-drying and smoking</p>	<p>➤ Variation in abundance of tuna and suitable conditions for fishing around FADs, due to climatic conditions, means that large catches will be made by small-scale fishers on some occasions. Equipping communities to extend the shelf life of these catches will help ensure that fish is still available for those times when conditions are not suitable for FAD fishing, or when the abundance of tuna is low due to seasonal variation.</p>	✓	✓		

Oceanic Fisheries Adaptations

Activity/Investment	Rationale	GCF priority			
		1	2	3	4
<p>➤ Identify spatial structure of tuna stocks and improve the skill of SEAPODYM in projecting the distribution and abundance of tropical tuna species in EEZs and in high sea areas by (i) integrating spatial information, and (ii) increasing the number of global climate models and biogeochemical models used for parameters</p> <p><u>Requirements:</u> Appointment of staff/contractors to i) collect samples for genetic analyses, and undertake the analyses required for assessment of stock structure for tropical tuna species, and ii) further improvements to SEAPODYM. Appointment of staff to liaise with PNA about the VDS and for economists to advise PNA about economic opportunities and costs associated with redistribution of tuna</p>	<p>➤ Improve understanding of the tuna resources underpinning economic development, the vulnerability of the ecosystems supporting tuna, and the availability of tuna for local for small-scale fishers and local food security.</p>				✓
	<p>➤ Inform PICs and the tuna industry about combined effects of fishing and climate change on distribution and abundance of tuna, and proportion of average catches allocated to VDS and local food supply.</p>	✓	✓		
	<p>➤ Inform PNA members and the tuna industry about possible effects of spatial structure of stocks, and projected changes in distribution and abundance of each identified tuna stock due to climate change, on the operation of the VDS.</p>	✓			
	<p>➤ Advise countries such as Kiribati and Tuvalu and the tuna industry about possible benefits of climate change on investments in coastal infrastructure to generate new livelihoods from enterprises based on servicing transshipping operations.</p>	✓	✓	✓	
	<p>➤ Advise PICs with tuna processing plants and the tuna industry about future climate-driven distributions of tuna and possible negative effects on supply of tuna for national processing facilities.</p>	✓	✓	✓	
<p>➤ Tagging programmes to determine mixing between tuna aggregated at nearshore FADs and those further offshore exploited by industrial fisheries</p> <p><u>Requirements:</u> Vessel to tag tuna in fishing exclusion zones; staff for tagging programmes and data analysis</p>	<p>➤ Increased catches of tuna by small-scale fishers around nearshore FADs will be needed to feed rapidly growing populations in several PICs. Tagging programmes are a key requirement in determining whether the existing exclusion zones for industrial fishing around these PICs provides adequate access to tuna for small-scale fishers. Tagging programmes will also help verify the findings of the genetic analyses described above needed to determine the spatial structure of tuna stocks.</p>	✓	✓		
<p>➤ Assessing the effects of ocean acidification on survival of tuna larvae and juveniles</p> <p><u>Requirements:</u> Collaboration with organisations that have suitable facilities for rearing the larvae of tropical tuna and testing the effects of increased ocean acidification on the survival and behaviour of larval and juvenile tuna</p>	<p>➤ Increased levels of atmospheric CO₂ are reducing the pH of the ocean. Experiments on the effects of ocean acidification on the survival of postlarval and juvenile marine fish show that some of the major effects are changes in behaviour, resulting in lower survival. It is vital to understand not only whether the effects of increased greenhouse gases are likely to alter the distribution of tuna, but also whether abundance of tuna is likely to decrease within altered distributions due to ocean acidification.</p>				✓
<p>➤ Develop improved data collection by purse-seine vessels to inform and improve stock assessment, and SEAPODYM</p>	<p>➤ Sampling purse-seine catches using image analysis promises to provide improved information on species composition and length frequency for stock assessments and validation of forecasted fishing conditions. Provided the ability of acoustics to</p>	✓	✓		✓

Oceanic Fisheries Adaptations

Activity/Investment	Rationale	GCF priority			
		1	2	3	4
<p><u>Requirements:</u> Systems for e-monitoring of catch and collection of acoustic records of micronekton by vessels</p>	<p>measure micronekton can be validated, collection of acoustic data by purse-seine vessels will improve the biogeochemical models used by SEAPODYM</p>				

Monitoring for Adaptive Management

Activity/Investment	Rationale	GCF priority			
		1	2	3	4
<p>➤ Monitor catches around nearshore FADs in selected PICs <u>Requirements:</u> Staff to continue monitoring fish catches around FADs</p>	<p>➤ Monitoring the catches of tuna made around representative FADs will enable national policy makers to determine the effectiveness of this adaptation and plan how best to continue to expand and maintain an infrastructure of nearshore FADs, based either on national revenue (e.g. fishing licence fees) or assistance from development partners.</p>	✓	✓		
<p>➤ Monitor effects and sustainability of transferring fishing effort from coral reefs to FADs <u>Requirements:</u> Staff to monitor changes in reef health before and after installation of FADs</p>	<p>➤ Monitoring the health of coral reefs and status of demersal coastal fish stocks is needed to identify the extent to which installation of FADs succeeds in reducing fishing pressure on reefs and builds the natural capacity of reefs to adapt to increased sea surface temperature.</p>	✓	✓		✓
<p>➤ Monitor the amount of small tuna (and other bycatch) landed by purse-seine fleets in regional ports during transshipping operations <u>Requirements:</u> Staff to organise and implement the monitoring of fish offloaded during transshipping operations</p>	<p>➤ The rapid rate of urbanisation in several PICs has increased the demand for fish in urban centres. The mandatory transshipping of purse-seine catches in port provides a low-cost source of fish (small tuna and bycatch not suitable for processing) at these locations. Estimates of the variation in supply of offloaded fish, and the likely effects of climatic change on where transshipping occurs, are needed to assess the extent to which transshipping operations will meet the increasing urban demand for fish.</p>	✓	✓		
<p>➤ Annual assessments of tuna available for domestic consumption <u>Requirements:</u> Estimates of tuna used for local food security from HIES, Tails, transshipping operations, and locally produced canned tuna</p>	<p>➤ A goal of the Regional Roadmap is to increase the domestic consumption of tuna by 40,000 tonnes per year by 2024. To do this, baseline consumption for 2015 needs to be established and annual estimates of progress towards this goal needs to be determined. The effects of climate change on progress to achieving this goal need to be assessed. In the event of a shortfall, additional adaptations will required.</p>	✓			

Information for Future Management

Activity/Investment	Rationale	GCF priority			
		1	2	3	4
<p>➤ Confirm national maritime boundaries <u>Requirements:</u> Support regional processes for confirming boundaries</p>	<p>➤ Confirmation of national maritime boundaries is essential to ensure Pacific Island countries do not lose any of their EEZs as a result of sea level rise, and to allow effective future management of tuna fisheries.</p>	✓	✓		
<p>➤ Assess the role of large fisheries exclusion zones in management of tuna stocks <u>Requirements:</u> Review fisheries data and stock structure (from OFP) to assess effects of large exclusion zones</p>	<p>➤ Some Pacific Island countries have established large fisheries exclusion zones (in addition to those such as the 12 nm zones to exclude industrial fishing. This activity will provide advice to PICs on the potential role of these large fisheries exclusion zones in management of tuna stocks.</p>				✓
<p>➤ Identify opportunities for the tuna industry to contribute to 'climate smart' management of tuna fisheries <u>Requirements:</u> Staff/consultants to work with industry to identify and assess potential industry actions</p>	<p>➤ The potential for markets to influence tuna fishing has been shown by increased demand for MSC-certified free school tuna. Industry influences tuna sourcing preferences and controls operation offishing vessels and it is therefore critical for effective 'climate smart' management of tuna stocks that the industry is fully involved.</p>	✓	✓		✓