



# PROJECT IDENTIFICATION FORM (PIF) <sup>1</sup>

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: LDCF

## PART I: PROJECT IDENTIFICATION

Project Title:	Effective and responsive island-level governance to secure and diversify climate resilient marine-based coastal livelihoods and enhance climate hazard response capacity		
Country(ies):	Tuvalu	GEF Project ID: <sup>2</sup>	
GEF Agency(ies):	UNDP (select) (select)	GEF Agency Project ID:	4571
Other Executing Partner(s):	Department of Environment; Ministry of Home Affairs and Rural Development; Ministry of Natural Resources	Submission Date:	2011-11-03
GEF Focal Area (s):	Climate Change	Project Duration (Months)	48
Name of parent program (if applicable): ➤ For SFM/REDD+ <input type="checkbox"/>	N/A	Agency Fee (\$):	420,000

### A. FOCAL AREA STRATEGY FRAMEWORK<sup>3</sup>:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
CCA-1 (select)	1.3. Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	LDCF	2,500,000	10,383,845
CCA-2 (select)	2.2. Strengthened adaptive capacity to reduce risks to climate-induced economic losses	Adaptive capacity of national and regional centers and networks strengthened to rapidly respond to extreme weather events	LDCF	1,500,000	8,217,751
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)	Others		(select)		
Sub-Total				4,000,000	18,601,596
Project Management Cost <sup>4</sup>			LDCF	<b>200,000</b>	1,000,000
<b>Total Project Cost</b>				4,200,000	19,601,596

## B. PROJECT FRAMEWORK

<sup>1</sup> It is very important to consult the PIF preparation guidelines when completing this template.

<sup>2</sup> Project ID number will be assigned by GEFSEC.

<sup>3</sup> Refer to the reference attached on the [Focal Area Results Framework](#) when filling up the table in item A.

<sup>4</sup> GEF will finance management cost that is solely linked to GEF financing of the project.

**Project Objective: Resilience of island communities to climate change variability and risks is strengthened through participatory island-level planning, budgeting and execution and community-led investments**

<b>Project Component</b>	<b>Grant Type</b>	<b>Expected Outcomes</b>	<b>Expected Outputs</b>	<b>Trust Fund</b>	<b>Indicative Grant Amount (\$)</b>	<b>Indicative Cofinancing (\$)</b>
Implementation of community-based climate resilient livelihood options to reduce vulnerability to future climate change	Inv	Marine based coastal livelihoods of Tuvaluan outer islands made resilient to declining productivity induced by climate variability and change	<p>At least 400 households (i.e. 2000 people at least 50% women) implement or benefit from community based adaptation focusing on near-shore cage farming, n-land spawning and aquaculture in 18 villages</p> <p>Capacity of local administrations, CSOs, communities and Community Fisheries Centers enhanced to integrate climate risks in the community-based management of ecological buffer zones including zoning guidance, marine resource stock surveys, risk assessment of coral bleaching and other climate risks, and monitoring and enforcement</p> <p>Technical capacity and awareness enhanced for at least 2000 people including island Kaupules, central government staff, CSOs, and Community Fisheries Centers to understand and respond to the impacts of climate induced risks/disasters on marine based coastal livelihoods</p>	LDCF	2,000,000	2,012,376
Enhanced communication of climate risks, connectivity and coordination to increase the response capacity of outer islands to increasingly frequent storms	Inv	Capacity of outer islands enhanced to respond to increasing climate induced hydro-meteorological risks	<p>Existing infrastructure used as evacuation sites in each island is equipped with robust communication facilities and early warning system (AM radio receiver, public announcement system, satellite phones), and early response facilities (emergency water supplies and preserved food) to increase the response capacity of island communities to Category 3 cyclones or above</p> <p>Training conducted to</p>	LDCF	1,500,000	8,217,751

			<p>Disaster Management Office (DMO), island disaster committees and communities for effective distribution of early warning information and early response measures including periodic implementation of evacuation drills.</p> <p>Island disaster response plans and communication protocols, taking climate change risks into account and aligned with the National Disaster Management Plan, developed for effective coordination, efficient evacuation and protection of lives and livelihoods, with an emphasis on the coordination between Disaster Management Office and Island Disaster Committees.</p>			
Inclusive local planning, budgeting and budget execution for strengthened climate resilience	TA	A nationally-owned mechanism established that leverages external financing for community-based climate change adaptation through participatory development processes	<p>All outer island development strategic plans, along with relevant line ministries' planning and budgeting, revised to integrate island-specific climate risks through a gender-sensitive, participatory planning and budgeting process</p> <p>Climate adaptation priorities as part of island development priorities financed by external sources</p> <p>Technical capacity enhanced for at least 100 national and island officials, CSOs, Island Disaster Committees on mainstreaming climate risks on livelihoods and of disasters into all island strategic planning, investment, execution and M&amp;E</p>	LDCF	500,000	8,371,469
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		

	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
				Sub-Total		4,000,000 18,601,596
				Project Management Cost <sup>5</sup>	(select)	200,000 1,000,000
				<b>Total Project Costs</b>		<b>4,200,000 19,601,596</b>

**C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)**

Sources of Cofinancing	Name of Cofinancier	Type of Cofinancing	Amount (\$)
National Government	Ministry of Home Affairs and Rural Development	Grant	7,784,053
Others	Falekaupule Trust Fund	Grant	2,044,596
Others	The Secretariat of the Pacific Community	Grant	46,646
National Government	Executing partner	In-kind	30,000
GEF Agency	UNDP through - Support to Local Governance project - Tuvalu MDG Planning project	Grant	1,478,550
Bilateral Aid Agency (ies)	Japanese Government	Grant	8,217,751
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
<b>Total Cofinancing</b>			<b>19,601,596</b>

**D. GEF/LDCF/SCCF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY<sup>1</sup>**

GEF Agency	Type of Trust Fund	Focal Area	Country Name/Global	Grant Amount (a)	Agency Fee (b) <sup>2</sup>	Total c=a+b
UNDP	LDCF	Climate Change	Tuvalu	4,200,000	420,000	4,620,000
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
<b>Total Grant Resources</b>				<b>4,200,000</b>	<b>420,000</b>	<b>4,620,000</b>

<sup>1</sup> In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table

<sup>2</sup> Please indicate fees related to this project.

<sup>5</sup> Same as footnote #3.

## **PART II: PROJECT JUSTIFICATION**

### **A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

A.1.1 the [GEF focal area/LDCF/SCCF](#) strategies:

This project is fully in line with LDCF/SCCF focal area objective 1 to “reduce vulnerability to the adverse impacts of climate change, including variability, at local, national, regional and global level” and objective 2 to “increase adaptive capacity to respond to the impacts of climate change, including variability, at local, national, regional and global level.”

A.1.2. For projects funded from LDCF/SCCF: the LDCF/SCCF eligibility criteria and priorities:

Consistent with the Conference of Parties (COP-9), the proposed project will implement priority interventions addressed in Tuvalu National Adaptation Programme of Actions, therefore satisfying criteria outlined in UNFCCC Decision 7/CP.7 and GEF/C.28/18. It will address urgent and immediate climate change adaptation needs and leverage co-financing resources from national government, bilateral and other multilateral sources. The project requests the LDCF to finance the additional costs of achieving sustainable development imposed on the LDCF-eligible countries by the impacts of climate change. Following the NAPA formulation process, it is fully country-driven, cost-effective and focuses on most vulnerable populations including women, woman-headed households, and households below or around the national poverty line. It will contribute to increasing the resilience of vulnerable island communities to additional risks imposed by climate change induced disasters with two-pronged approach: Firstly, through participatory island-level planning and budgeting processes, it will integrate future climate risks on livelihoods, through gradual changes in coastal environment and through sudden onset of disaster, into the focus of island development process to assist the community in securing, diversifying and strengthening subsistence marine-based coastal livelihoods. Securing and strengthening of livelihood options is critical in reducing vulnerability of outer island communities to increasing climate change induced disasters and variability, and is aligned with priority interventions identified in NAPA (Priority 5 and 6<sup>6</sup>). Secondly, it will improve the response capacity of institutions and communities to increasing climate hazards through enhanced communication facilities, community awareness on climate risks, provision of physical shelters, and strengthening preventive, rather than reactive, solutions (NAPA priority 7) to such events. Thus, the proposed project is aligned with the LDCF Results Framework Objective CCA-1 and CCA-2 as described in Table A above. This approach also underpins the recognition of the linkage between adaptation and poverty reduction (GEF/C.28/18, 1(b), 29) and is aligned with the scope of expected interventions as articulated in the LDCF programming paper and decision 5/CP.9. The NAPA priorities addressed in the first LDCF project and the proposed second LDCF project are presented below:

NAPA Priorities	1 <sup>st</sup> LDCF Project (2008-2012) (GEF Agency: UNDP)	Proposed LDCF Project (GEF Agency: UNDP)
1. Increasing resilience of Coastal Areas and Settlement to climate change	X	
2. Increasing subsistence pit grown pulaka productivity through introduction of a salt-tolerant pulaka species	X	
3. Adaptation to frequent water shortages through increasing household water capacity, water collection accessories, and water conservation techniques	X	
4. Strengthening of Community health through control of vector borne/climate sensitive diseases and promotion access to quality potable water		

<sup>6</sup> NAPA priorities are ordered differently in the NAPA document. This proposal refers to the priority list and ranking presented in page 7 and 37 of the NAPA document.

5. Strengthening of Community Based Conservation Programmes on Highly Vulnerable near-shore Marine Ecosystems		X
6. Adaptation to Near-Shore Coastal Shellfish Fisheries Resources and Coral Reef Ecosystem Productivity		X
7. Strengthening Community Disaster Preparedness and Response Potential		X

- A.2. national strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NIPs, PRSPs, NPFE, etc.:

The overarching goal of the project is to increase the resilience of outer island communities to future climate change induced risks such as declining marine resources productivity and increasing/intensifying climatic hazards. This goal is fully aligned with, and underpinned by, the development priorities of the Government of Tuvalu as set out in Te Kakeega II (National Strategy for Sustainable Development 2005-2015) which is in turn framed around the national Millennium Development Goals. The Te Kakeega II provides a framework for key sectoral development strategies which collectively contribute to the achievement of the national goal of a “healthier, more educated, peaceful and prosperous Tuvalu.” It acknowledges climate change impacts and effects on declining subsistence food production as a key obstacle to the achievement of the Te Kakeega visions and long-term sustainability of the nation. Furthermore, the underlying strategy of the proposed project – effective and responsive governance for improved “planned adaptation” at the outer island level – directly responds to the strategies 1 and 4 of the Te Kakeega II, which aim at good governance and empowerment of Falekaupule (island-level assembly) and outer island development, and strategies 3 and 7 which aim at advancing gender equality, reducing poverty and promoting sustainable use of natural resources including fisheries. This in turn, by the design of the Te Kakeega II, helps the country move towards the achievement of the MDGs.

The National Climate Change Policy (NCCP), which is fully aligned with the Te Kakeega II and is currently being formulated (to be submitted to Parliament in November 2011), outlines both adaptation and mitigation measures to be undertaken in several key sectors including agriculture, fisheries, water, health, land use, disaster risk management and coastal management. This Policy builds on consultative mechanisms developed in the NAPA and National Communications processes and is directly supported by the first NAPA follow-up project. Consultations in each of the inhabited islands have been undertaken, reinforced by vulnerability assessments carried out in the National Communications and first NAPA follow up project, and identified ten priorities that are consistent with NAPA. They include securing of national sovereignty, disaster risk management/preparedness/reduction, food security, water resources, improved climate information, public awareness, gender, and health. In parallel with the formulation of the NCCP, the Joint National Action Plan for Climate Change Adaptation and Disaster Risk Management is also under way and sets out the implementation plans focusing on these two areas. Once completed, the NCCP and JNAP would provide mutually reinforcing backbones to the national strategy towards climate change adaptation and DRM strategies.

Tuvalu completed its First National Communications to the UNFCCC in 1999 and the Second National Communications is under its way (expected completion towards the end of 2011) and both point out the high degree of vulnerability of the country and urgency of actions required. NAPA was published in 2007, totaling USD 8.7 million, which identified seven priority areas including disaster risk management and securing key livelihoods from various manifestations of climate change. The first NAPA follow-up project currently under implementation, with UNDP support, addresses three NAPA priorities: coastal management, agriculture and water. This proposed project addresses three of the remaining four priorities of disaster risk management (Priority 7) and fisheries and (Priority 5 and 6) in the context of reducing vulnerability of subsistent marine-based coastal livelihood options from future climate change risks and

disasters.

The National Disaster Plan 1997 is currently being revised and upgraded to the National Disaster Management Plan (to be published in 2011) that sets out the guiding framework for not only disaster response, but also the need for aid coordination, which is a reflection of the natural hazard proneness of the country. The JNAP on Disaster Risk Management is currently being formulated with support from SOPAC and SPREP and expected to operate within the broad framework set out in the National Disaster Management Plan 2011.

Since the late 1990s, the Government has placed a considerable emphasis on efficient and effective delivery of public services, including those affecting the priorities above, through a strengthened island-level governance mechanism. Good governance is identified in the Te Kakeega II as the first of the eight strategic areas. With limited government capacity at the central level and the geographical challenge with nine scattered small islands constituting the nation, establishing a self-servicing island-level governance system, supplemented by technical and financial support from the capital, is considered critical in achieving Tuvalu's development goals. The Falekaupule Act of 1997, which is also known as the Local Government Act, ushered in the current two-tiered governance system that comprises the national government and island-level administrations and provided the legal basis for the current decentralization process. This act devolved the local governance authority to the island council (Kaupule), which is the executive arm of island assembly (Falekaupule), to implement the Te Kakeega II and other community-level development priorities. In principle, this puts local communities, led by respective Kaupules, at the center of local development process. The Act also gave rise to the Island Strategic Plans (ISPs) and to financial allocation systems to support the implementation of the development priorities identified in ISPs.

The Tuvalu Marine Resource Act is currently being reviewed to incorporate community-based marine resources management plans with the view that the monitoring and enforcement of marine resources are best exercised by Kaupules and local communities. The recently completed Fourth National Report on National Biodiversity Strategy and Action Plan (NBSAP) recognizes the synergy between climate change policies/adaptation measures and the importance of empowering Kaupules in sustainable management of marine resources.

## **B. PROJECT OVERVIEW:**

B.1. Describe the baseline project and the problem that it seeks to address:

### **Problem**

Tuvalu is the fourth smallest nation in the world with the landmass of 26km<sup>2</sup> with 9561 people<sup>7</sup> scattered across nine inhabited islands. The country's exclusive economic zone covers 750,000 km<sup>2</sup>. Funafuti island, where the national capital of Funafuti is located, is home to about half of the population. The challenges Tuvalu faces in the context of climate change are similar to other small island countries. Sea level rise and rising atmospheric and surface ocean temperatures are among two direct consequences of increasing CO<sub>2</sub> emissions and there is clear evidence of upward changes in these parameters. Sea level rise is a direct threat to lives, assets and livelihoods in coastal regions, in which 90% of the country's population resides, and a cause of salination of scarce groundwater resources. Rising surface ocean temperatures reduce productivity of marine resources, through loss of marine habitats (coral bleaching), and shift in fish population. There is clear evidence of mean sea level increase regionally (2-3mm/year) and temperature increase in the last six decades (0.2°C/decade), and these trends are likely to continue in the future. With regards to tropical cyclones, past records from 1980-2001 show an increasing trend of occurrence in the Pacific region which is expected to continue (NAPA, 2007) and IPCC's Fourth Assessment Report reports an increasing trend regionally in tropical cyclones, in frequency and intensity, between the 1990-2004 period compared with the 1975-1989 period. However, there is much larger uncertainty in the current science around the future direction of other regional climatic parameters, such as rainfall patterns. Two IPCC scenarios on future precipitation trends indicate opposing projections: By 2100, changes from past mean values are predicted

---

<sup>7</sup> 2002 Census.

to range from -95.4% to +37.7%.

There are two distinct seasons in Tuvalu: a wet season from November to April and a dry season from May to October. With mean annual rainfall of around 3,500mm, Tuvalu is in general endowed with rainfall. Even during the driest months of the year, there are about 200mm/month of rain, which brings much needed water resources to the country for domestic and agricultural purposes. However, Tuvalu experiences significant seasonal, inter-annual and inter-decadal variations in rainfall due to the influence from the South Pacific Climate Zone (SPCZ) which in turn drives the cyclical trends of ENSO that determines the amount of rainfall and occurrences of tropical cyclones. For example, there was an excessive rainfall trend in the late 1990s followed by too little rain in the early 2000s and the difference in the average annual rainfall between these two periods was more than two-fold. In general, tropical cyclones are more frequent during El Nino events (average 1.6 per season) and less so during La Nina events (average 0.3 per season)<sup>8</sup>. Nonetheless, due to the large degree of variability, which is expected to become larger with climate change, Tuvalu over years has suffered from prolonged droughts and intensive rain in shorter time intervals.

Sea level rise, for which there is clearer evidence, acts as a risk multiplier during tropical cyclones, which themselves are a manifestation of climate change, annual king tides (which often occurs between January-March) and sea swells. Cyclones have in the past resulted in evacuation of families and considerable damages to infrastructure and destruction of livelihood assets. The two largest cyclones that devastated Tuvalu in the last four decades provide a glimpse of what the country will face more of under a changing climate. The 1972 Cyclone Bebe and 1997 Cyclone Keli destroyed 97% and 100% of houses on the most affected islands, Funafuti and Niulakita respectively. These large scale disasters along with many more, smaller scale hydro-meteorological events have caused significant material/infrastructural damages to the livelihood foundations of the community.

Three out of nine islands of Tuvalu (Nanumaga, Niutao and Niulakita) are table reef islands which have a lagoon within the island. The lagoon provides a safe haven for marine resources collection – an important livelihood activity for women and the elderly. However these islands are vulnerable to not only tropical cyclones, storm surges and sea swells from outer ocean, but also overflowing of water from the lagoon during high/king tides. Consultations with island communities in the past have revealed a number of ongoing or potential sources of climate induced threats to livelihoods – most importantly farming and fisheries: declining marine productivity due to the combination of surface ocean temperature and destruction of habitats such as coral reefs and sea grass bed by cyclones and bleaching; and saltwater intrusion into pulaka pits (Tuvalu's traditional submerged taro plantations). The level of contribution of subsistence food production in Tuvalu is higher than many other neighboring Pacific countries: It is estimated that the subsistence food production as % of household income for Tuvalu is 55% whereas that for Samoa, Kiribati, Tonga, Solomon Islands, and Palau ranges between 3-37%<sup>9</sup>. Marine resources are an important source of livelihoods and source of protein for the island nation of Tuvalu. 90% of households in Tuvalu engage in subsistence harvesting of marine resources as their food source. FAO estimates that fish contributed an average of 22.3% of all protein to the diet and 38.0% of animal protein. These marine resources are declining due to combined factors of climate change and anthropogenic reasons. Most Tuvaluan households engage in household-level fishing and collection activity to supplement their diet, and near-shore fishing is the main source of fish catch. Coral reefs that harbor near-shore fish and shellfish resources are in critical danger as the present sea surface temperature of Tuvalu is around 29°C (+/-0.5°C with seasonal variation) which is already touching the upper limit of the tolerance range for most coral species (25-29°C). Furthermore, frequent tropical cyclones cause devastating damages to coral reefs and fishing infrastructure. In addition to these climate change induced factors, overfishing/exploitation is considered to be contributing to the declining viability of the marine resource-based economy. Household surveys administered by SOPAC in 2004-2005 revealed Tuvalu's significant dependence on marine resources: national average consumption of fish is nearly 98.4kg/capita/year compared to the regional

---

<sup>8</sup> Pacific Climate Change Science Program – Tuvalu Country Brief.

<sup>9</sup> Extracted from a paper prepared for Pacific Islands Ministers of Agriculture and Fisheries Meeting, 2008. Presented by the SPC.



average of less than 50kg and some outer islands had average consumption of over 150kg of fish.

The preceding analysis presents that climate change impacts in the form of increasing trends of intensifying disasters and declining productivity of marine resources from the compounded effects of disasters, loss of habitats and shift in fish population, amplify an already challenging environment for outer island communities and increase the vulnerability of their livelihoods.

## **Underlying causes**

### *Vulnerability of coastal livelihoods to climate change*

While the high degree of the exposure and sensitivity to climatic risks is inherently unavoidable to a certain extent for a small island developing state, the combined underlying factors of geographical isolation within the country and relative to the rest of the world, thin natural resource base, limited human resource capacity and financial resources, contribute to high vulnerability of the society to anticipated future climate risks. These underlying causes can be largely classified into three interrelated categories: Existing and exacerbating vulnerability of marine-based coastal livelihoods to climate change risks; low institutional and community response capacity to climate hazards; and nascent outer island-driven development process with insufficient considerations for emerging climate risks that prevents the central and local governments from providing desirable solutions to address the first two causes. They in turn constitute the key pillars of the proposed project and this section reviews these underlying causes in detail.

Awareness about general risks from hydro-meteorological hazards is high among the general public and government officials in Tuvalu that has been laden with such hazards in the past. Nonetheless, the technical nature of climate change science and the lack of skills to translate climate risk information into workable climate resilient livelihood solutions or disaster risk management measures are all preventing Kaupules and communities from addressing the additional risks imposed by climate change on their livelihoods and formulating local development plans that fully reflect such risks. For example, while the declining productivity of marine resources is acutely recognized by local communities, as evidenced in NAPA and national consultations for the NCCP, and they acknowledge it is partly attributed to climate change, they often do not have access to expertise in crafting adaptive measures to a changing surrounding environment. Alternative coastal livelihood options, such as in-land aquaculture or disaster tolerant mariculture, which help communities develop more resilient and diversified livelihood system, are tested only on a small scale by a few donor funded initiatives. As a result, the most common counter-response to declining productivity of marine resources is simply reducing the fish/shellfish intake of the particular species, and compensating the decline by overfishing others, without much consideration for the overall stock of marine resources. The lack of capacity or knowledge to adapt or diversify livelihoods to the changes in surrounding environments, coupled with the lack of sufficient funds to implement adaptation measures, forces outer islands to be reactive to climate change risks rather than developing forward-looking resilient livelihood systems that have in-built buffering mechanisms. The reactive nature to climate risks in the past puts additional strains on resource-thin societies as some of the past losses could have been avoidable had planned adaptation measures been in place.

Despite the large degree of dependence of the society on marine ecosystems, there is little codified knowledge on the stock of resources that are available to them. Declining fish catch, for example, has been reported only anecdotally but accurate information of the natural resource stock is non-existent. This constrains the community not only to identify effective and sustainable livelihood practices, but also to explore new livelihood opportunities such as cultivation of new fish species that are currently under-utilized. An ongoing work by the SPC to assess the degree of changes in productivity of coastal marine resources and the impact of climate change is expected to shed some light in this area. However, the assessment is limited to the main island of Funafuti.

There are also gaps in the regulatory environment that would help to secure subsistence livelihoods that mostly rely on fragile island ecosystems. Tuvalu Marine Resources Act was in principle established to promote sustainable use of marine resources, but it is not accompanied by a management plans and due to the challenge with monitoring and enforcement in outer islands, it has been ineffective in preventing

overharvesting that contributes even further to increasing vulnerability of subsistent coastal livelihoods. To respond to this, UNDP has been promoting, through the GEF/SGP, community-driven, informal Marine Protected Areas which provide more realistic guiding framework for sustainable use of marine resources as it devolves the monitoring and enforcement function to the local level. However, these guiding frameworks, both formal and informal, do not take into account emerging climate risks – both slow changing parameters such as sea level rise and ocean surface temperatures and sudden onset of hydro-met disasters, nor do local administrations and communities have capacity to integrate these risks into the management plan of community-led ecological zoning measures. For example, existing marine protected areas are not necessarily designated based on island-wide vulnerability assessments, surveys on changing marine resource stocks due to climate change, or ongoing changes in habitat structure. Neither have assessment of dynamic maximum sustainable yield been undertaken to determine the appropriate level of activities inside the protected areas. Failure to include these emerging risks into the management of marine resources potentially has the risk of simply diverting the areas of over exploitation to areas where resources are in fact most fragile.

*Low institutional and community response capacity to climate hazards*

While the Tuvaluan society is ill-equipped – financially, technically, and legislatively – to foster planned adaptation for their coastal livelihoods as described above, their response capacity to anticipated climate hazards is also severely limited. Weak response capacity within institutions and communities to climate risks, or climate change induced disasters in particular, is hampered by the lack of reliable communication and sufficient policy framework for coordination and effective early response<sup>10</sup>. The lack of reliable communication facilities acts as an additional driver to make their livelihoods even more vulnerable as early warning on sudden storm surges or swells often does not reach individuals in outer islands to prevent damages to critical livelihood assets and infrastructure. Table 1 below shows the channels through which early warning information is currently disseminated to households in outer islands. Four actors (Met Department, Disaster Management Office (DMO), Island Disaster Committees (IDCs) & Tuvalu Media Department (TMD), and households) are engaged in information dissemination which poses a significant challenge in swift dissemination of information. In addition, the current system relies on highly vulnerable modes of communication which has proven their susceptibility to bad weather conditions and maintenance challenges.

**TABLE 1**

	Information dissemination route	Process/Mechanism	Issues
1	Meteorology Department → DMO	Early warning information on hydro-meteorological hazards is issued from the Nadi or Hawaii Forecasting Centers. Based on this information, and according to the National Disaster Plan, the information is shared from Met to DMO (usually by phone)	Due to proximity of these two actors, the dissemination of information is swift and poses no issues
2	DMO → Island Disaster Committees & Tuvalu Media Department (TMD)	[Funafuti] DMO communicates with Police and Funafuti’s IDC through phone and FAX. At the same time, TMD is also informed for disseminating information through FM radio. [Other outer islands] To those outer islands equipped with a telephone line, DMO disseminates info to IDCs through phone/fax.	Both the landline and satellite phone have been unreliable especially during bad weather.  FM receiver/transmitter currently in use requires frequent maintenance that needs to be attended by a technician from the

<sup>10</sup> SOPAC. 2005. Baseline survey of hazard warning and disaster response systems for Pacific Island States.

		To those without a telephone line, satellite phone is used. Information is also sent from TMD through satellite to an FM receiver installed in each island.	capital. Breakdown often results in lack of communication facility for months
3	IDC → Communities	IDCs use disaster sirens and the public announcement system in each island.  The FM receiver in island rebroadcast information within the island to households	Most FM radios in households are electricity-powered, which limits the availability of the radio only 18 hours a day (6AM-12AM) when electricity is available.

Climate change induced hazards are expected to increase their frequency and intensity in the future, and yet, all outer islands currently have only two modes of communications (phone and FM radio) whose reliability is questionable at the time of severe tropical cyclones and hurricane, as proven in the past. If these channels fail at the same time, as in the case of the 1997 cyclone, the island will be completely disconnected from the outside information.

Another factor that contributes to high vulnerability of island communities to increasing climate risks is the absence of robust evacuation facilities. As described earlier, during the severe cyclones which have struck Tuvalu in the past, people had to seek refuge in the most robust structure on the island (often cases, a church), which is not necessarily equipped with sufficient emergency response facilities..

Lastly, low response capacity of communities and outer island administrations to climate hazards is attributed to the absence of a mechanism to reflect island-level vulnerabilities in their development priorities. A number of donor-funded initiatives have carried out vulnerability assessments (both perception-based and GIS based hazard mapping) but they have been ad hoc and the results have not informed national or island development processes in a systematic manner.

#### *Nascent participatory development process with insufficient considerations for emerging climate risks*

Insufficient level of participatory, accountable local governance accompanied by sufficient financial underpinnings and capacity of local administrations, exacerbate the issues raised above. Currently, the two-tier governance system (central and outer island-level *kaupules*) remains highly skewed towards the former in terms of financial resources and technical and human capacity despite the government's efforts for a local governance reform in the last 15 years. Significant efforts have been devoted to foster an enabling environment for a participatory and transparent decision making system at the outer island-level; and recently, an Island Strategic Plan (ISP) has been crafted for some islands in a participatory manner, which is a step towards outer island-driven development processes as envisaged in *Te Kakeega II*. Capital Investment Plans, which accompany the ISP, provides information on investment needs and are used as a means to finance development priorities in the ISP through the national budget allocation process. The Special Development Expenditures (SDEs) is a government budgeting mechanism specifically to finance development needs of outer islands and increasing alignment between ISPs and SDEs is being achieved. However, such processes are only gradually taking root in Tuvalu. In fact, all outer islands are in the first cycle of generating their ISP and CIP and the process of matching community development needs with public financing, through the Special Development Expenditure, is still a new concept for *Kaupules* and communities. For example, community's needs for altering the livelihood practices or climate proofing existing infrastructure in anticipation of intensifying cyclones and reducing marine resource productivity, has not been discussed at the time of the first ISP formulation. Ensuring greater representation from a wide range of social groups in the ISP formulation process also requires continued work. For example, *Falekaupule*, the island level decision making body is comprised of all men over the age of 50. This is a legacy of the traditional decision making system that can be traced back centuries. This system inevitably embraces the risk of overlooking issues that differently impact different segments of society such as climate change and prevents desirable solutions from emerging. However, this exclusivity is beginning to change as the UNDP-assisted Support to Local Governance project phase II (SLGII) is in the process of revising the *Falekaupule Act* to ensure that formally neglected groups, such as women and youth, are well consulted and engaged in decision making processes.

Unbalanced distribution of human resources at the central level also poses a considerable challenge in understanding and integrating climate risks into the ISP. As described earlier, while the general awareness about climate change is high, *Kaupule* members and communities do not have access to the knowledge of the impacts on their critical livelihoods, and do not have the expertise to design response measures. As a result, the current ISPs invariably pursue a development paradigm under the business-as-usual scenario and future risks that climate change imposes on community development are simply neglected.

Moreover, the level of public financing to support implementing the ISP priorities acts as another limiting factor for *Kaupule* to respond to the needs of local communities. What was earmarked in 2011 for the Special Development Expenditure (SDE) was USD1.25 million (or USD156,250 per island on average)<sup>11</sup>. Moreover, reflecting the general fiscal constraints for the government and volatile influx of donor grants, which constitute 37% of the government revenues, the SDE budget also shows high fluctuation from year to year. This makes it extremely difficult for *Kaupules* to foster planned adaptation for future climate change.

*Falekaupule Trust Fund* (FTF) is an alternative source of development finance that is available for outer island communities. FTF was established with donors' financial assistance (New Zealand, Australia, Japan, Republic of Korea) along with the enactment of the 1997 *Falekaupule Act* to supplement the financial needs of outer island development. In principle, it is considered advisable that the Trust Fund also use the Island Strategic Plan as the guiding framework to identify and finance priority development projects. However, in reality, the use of the Trust Fund has not been systematic and oftentimes there is disconnect from the island-level development planning and budgeting processes. The available resources are smaller than through SDE and in the last 3 years, each outer island has utilized on average USD64,000 per year for fulfilling their development needs.

Where donor funded initiatives have constructed communal infrastructure, maintenance has also been a challenge. This is due to a combination of factors such as financial limitation, incentive alignment, insufficiency of ownership and technical capacity. Such initiatives have often focused too much on fulfilling community needs and overlooked the necessity of putting in place a community-driven mechanism to ensure continuous maintenance. Past experience show that mechanical minor problems are often left unattended until they become completely out of control and assistance from the capital is requested only then. The boat that connects outer islands with the capital runs only once a month, which is often disrupted due to weather conditions, and this limit the possibility of timely delivery of services requested. For example, the FM radio network was built in the early 2000s to replace the AM network that had been damaged by a cyclone. However, the FM system is mechanically more complex than the AM, and technical issues with the receivers in outer islands can be attended only by a few technicians in the capitals. As a result, there are several islands that have been disconnected from the outside information for months due to the breakdown of the receivers.

### **Long-term solution and barriers to achieving it**

As explicitly stated in *Te Kakeega II*, in a country like Tuvalu comprising of outer islands, attaining sustainable development requires strengthened capacity within outer island administrations to identify and execute development priority actions. This capacity also contributes to attaining resilience to climate change. Addressing climate change adaptation needs is an endeavor that requires continuous assessments of climate risks and sources of vulnerability, the level of response capacity and adjustments in their response plans accordingly. Such "adaptive management" in the context of Tuvalu is best carried out and most cost effective if undertaken at the community level as part of the regular, rather than one-off, local decision making and development process. This requires, first and foremost, local communities being cognizant of the sources vulnerability to climate risks, but also the potential impacts of these hazards on their livelihoods and assets. Integrated vulnerability analyses need to inform the island-level decision making through frequent dialogues among planners, community and community organizations (women's groups, youth groups, etc) to formulate climate resilient Island Strategic Plans and associated Capital Investment Plans (CIPs). For meaningful execution of projects to reduce vulnerability or to increase response capacity, it is crucial first to enhance technical capacity to understand potential climate risks among local contractors, *kaupules*, community members and specialized community organizations such as

---

<sup>11</sup> While there are nine inhabited islands in Tuvalu, the local administration of Niulakita is jointly managed by Niutao. Therefore, there are eight *Kaupules* and *Falekaupules* in Tuvalu.

Women's council or Community Fisheries Centers (CFCs). Then, these risks need to be integrated into the design of development projects ("climate proofing") and reflected into the Island Strategic Plan. Availability (or certainty) of funds to finance the additional costs of achieving sustainable development imposed by climate change is a key prerequisite for effective planned adaptation such as building in necessary redundancies in livelihood infrastructure engineering. Implementation of climate change adaptation measures then needs to be properly monitored and the progress of implementation reflected in the following year's planning and budgeting. There also needs to be a proper incentive mechanism for community engagement for monitoring, enforcement and maintenance of community assets to promote ownership and longevity of the investments. In addition to community-driven solutions for climate change adaptation, there also needs to be a centrally led system in place to increase the response capacity of institutions to anticipated climate hazards such as effective early warning systems and evacuation facilities to prevent loss of life and livelihoods.

In broad terms, the proposed project addresses institutional, policy, financial, technological and informational barriers that currently prevent island communities in Tuvalu from achieving the desired situation described above. Participatory local decision making and budgeting is in its infancy in Tuvalu. Future climate risks and local traditional coping mechanisms do not sufficiently inform the planning (i.e. ISPs) and budgeting (i.e. CIPs) process. Financial and technical support from the central government remains limited and as a result available technologies that can strengthen climate resilient livelihoods do not sufficiently reach vulnerable communities. The combination of financial and technological barriers prevents proper public services to secure livelihoods from and reduce exposure of island communities to anticipated climate induced hazards. Consequently the additional costs associated with adaptation are not factored into new investments or the operation and maintenance of existing investments.

### **Baseline Project(s) that the project will build on<sup>12</sup>**

There are several Government, UNDP and other development partner supported projects that form the baseline for the proposed LDCF project. These initiatives include ongoing measures to improve local governance process at the island level (targeting *Kaupules*) and central level (targeting Ministry of Home Affairs and Rural Development who is responsible for outer island development); support outer island development through public-funded Special Development Expenditures; enhance connectivity and communications of outer islands for improved disaster preparedness; and demonstrate sustainable use and management of marine resources. All of these initiatives constitute the baseline for the proposed project which aims at addressing the additional risks posed by climate change and increasing the resilience of island communities through measures that reduce direct exposures to climate risks and reduce vulnerability of subsistent marine-based coastal livelihoods.

The following projects represent the co-financing provided and leveraged by UNDP towards the proposed LDCF project:

- **Support to Local Governance (SLG) Project, Phase II**

**Co-financing: USD 766,586 (jointly funded by UNDP and NZAID)**

SLG in its second phase (2009-2012) represents UNDP's long-standing assistance to Tuvalu in local governance reform. It is supporting the Government of Tuvalu, especially outer island administrations, in achieving the Te Kakeega vision through greater autonomy and improved participatory planning, budgeting, execution and monitoring of outer island development plans. Key elements of the current phase of SLG include the following:

- Building institutional and human capacity at national and island level for enhanced participatory planning, budgeting, execution and monitoring
- Greater community participation, especially women and youth, in island-level decision making process
- Improving the strategic budgeting of ISPs by formulating associated Capital Investment Plans and ensuring the effective use of the Falekaupule Trust Fund

---

<sup>12</sup> AusAID during the initial stakeholder consultation indicated their willingness to provide cash co-financing for the project. The amount of the co-financing will be determined during the project preparation phase and the co-financing figures will be adjusted accordingly before the submission of a CEO endorsement form.

The project has assisted formulation of an ISP for each island (four is already operational; the drafting of the other four has already started). Continued capacity development assistance is undertaken for both national and island level officers for improved participatory planning and budgeting, stronger alignment of ISPs with the *Te Kakeega II*. To address the persistent challenge of fiscal constraint to assist island development, *Kaupules*, with assistance from SLG-II, are formulating Capital Investment Plans (CIPs) that bridge the funding gap that existed earlier: That is, ISPs are positioned as a medium-term (5 years) strategic planning tool, and while this helps to achieve a greater alignment with the national strategic plans, ISPs often lacked specificity and annualized investment plans. CIPs list specific investment requirements to achieve the overall goals identified in ISPs and are revised annually to reflect the progress made in the previous year. The support provided under SLG-II helps *Kaupules* to achieve more streamlined processes that ensures alignment of the *Te Kakeega II* as an overarching development framework; the ISP as an island-level development plan, downscaled from the national plan; and the CIP as the guiding framework for investments that are required to achieve the development priorities presented in the ISP.

Effective use of the *Falekaupule Trust Fund (FTF)* is also promoted with assistance from SLG-II. FTF is another source of development financing for outer islands which was established along with the *Falekaupule Act* in 1997. Although one of the objectives of the FTF is to act as a matching fund for those community projects that cannot be financed by SDEs alone, the use of the FTF has been stagnant in recent years. SLG-II is promoting mutually beneficial use of both FTF and SDEs so that the actual use of FTF is aligned with the FTF deed that specifies that the purposes of the Fund is “increase self-reliance through local training; improve island assets and resources; fund community projects to improve living conditions; and increase revenue-generating opportunities.”

A strong emphasis of SLG-II is placed on greater community participation into local governance, especially women and youth. In collaboration with the Tuvalu Association of Non-Government Organisations (TANGO), SLG-II is promoting participatory budgeting skills to have community priorities increasingly reflected in ISPs and CIPs while increasing the skills of community facilitation among *Falekaupule* and *Kaupule* members. Amendment of the Act is being sought to nurture an environment that is more conducive for women’s participation and to provide a legal basis for greater participation of community members.

While the phase I of SLG started in 2005, UNDP has been assisting the decentralization process since the formulation of the *Falekaupule Act* of 1997, and the knowledge and lessons learned accumulated over years have informed the design of the both phases of SLG. A discussion is currently ongoing to decide whether the government should fully nationalize the decentralization mechanism after the completion of SLG-II.

- **Government of Tuvalu based public expenditure for outer island development**  
**Co-financing: USD 7,784,053<sup>13</sup>**

Ongoing public expenditures (Special Development Expenditures – SDEs) exclusively for outer island development constitute an important part of the development baseline on which this proposed LDCF project will build. As described in the “Underlying causes” section, the level of SDEs fluctuates substantially over time. Over the last 3 years, the amount earmarked for outer island development was USD1,521,259 (2009-actual), USD2,098,941 (2010-actual) and USD1,200,000 (2011-budgeted). The use of SDEs was left to the discretion of each *Kaupules* and there has been little accountability on the part of *Kaupules* to the central government to date. However, with support from the SLG, a greater alignment of development activities with ISPs, and thus increasing accountability, is expected. In 2009, community development projects financed through SDEs included:

- Construction of a jetty (Nukufetau, \$150,001)
- Multi-purpose training center (Nukulaelae, \$29,523)

---

<sup>13</sup> Since the national budget and distribution of FTF to outer islands is prepared annually, the exact baseline figures for the project period cannot be accurately determined. Thus, the following calculation was made to generate an estimate of the baseline during the proposed project: For SDE, the average SDE budget figures over 2009-2011 was multiplied by 4 years (the project cycle) to estimate the likely baseline (\$6,426,933); There is also budget support to *Kaupules* for their operational expenses in the form of “Block Grant”. The same calculation was made based on the 2009-2011 figure to produce an estimate of \$1,357,120;

- Installation of navigational buoys for fisheries sector development (Nanumea, \$14,798)
- Access to lakena plantation (\$55,938)
- Building of Olioli causeway (Niutao, \$19,341)
- Installation of water cistern (Niutao, \$80,000)
- Construction of pig pens (Niutao, \$75,523)

As neither an increasing risk of climate hazards nor climate change impacts on livelihoods is integrated into the formulation of ISPs, the investments financed by SDEs inevitably do not address climate change concerns. In other words, investments that aim at enhancing/diversifying livelihoods, including marine-based coastal livelihoods, if any, do not take into consideration of intensifying impacts of climate change including tropical cyclones or sea swells or emerging risks such as increasing stress on natural coastal ecosystems due to climate change. Through the project activities envisaged under Component 3, especially with awareness raising exercises on intensifying climate hazards and risks on livelihoods, the composition of development priority list is expected to change. Part of the LDCF resources under Component 1 will be used to directly strengthen such priority actions relating to marine-based coastal livelihoods with considerations of future climate change risks. Extrapolating from the available information on the use of SDEs in the past, it is estimated that approximately 20% of the future priority actions financed through SDEs are related to coastal livelihoods (which is counted towards co-financing under Component 1).

Further assessment of the use of SDEs will be undertaken during the project formulation phase to identify those community investments especially in the areas of livelihood enhancement and disaster risk preparedness.

- **The Falekaupule Trust Fund for outer island development<sup>14</sup>**

**Co-financing: USD 2,044,596**

The Falekaupule Trust Fund, which was established to assist outer island development process, is independently managed by the FTF Secretariat. The use of the fund is determined by each *Kaupules* with guidance from the FTF Deed and endorsement by the FTF board, comprising of representatives from line ministries and chaired by the Minister of Home Affairs and Rural Development. The fund is to be used for any priority development projects and there is an increasing effort to align the use of the fund with the Island Strategic Plans. As is the case for the use of SDEs, *Kaupules* are responsible for deciding what investments to be financed via the FTF. The decision over which projects to be financed through SDEs and the FTF is currently arbitrary and determined by each island. Those existing disaster risk mitigation measures or livelihood support investments, in the context of promoting/securing marine-based coastal livelihoods, financed through the FTF will be identified and properly “climate-proofed” through the LDCF resources.

- **Vulnerability and adaptation of coastal fisheries to climate change**

**Co-financing: USD 46,646 (the Secretariat of the Pacific Community – funded by AusAID)**

The SPC is undertaking a regional project, of which Tuvalu is part, to design and field-test monitoring pilot projects to determine whether changes are occurring in the productivity of coastal fisheries and, if changes are found, to identify the extent to which such changes are due to climate change. The project has selected Funafuti as a pilot site from which to collect data and conduct a baseline assessment on the coastal fisheries resources and habitats. The project is also providing capacity building trainings to government officers at the central level to undertake monitoring activities with the two temperature data loggers. The LDCF project will work closely with the SPC to expand this initiative to outer islands to make available the baseline data and capacitate *Kaupule* officials and other community members for community-driven management of coastal fisheries resources. This will provide an important baseline for climate resilient marine ecological buffer zones that are envisaged to be designated with LDCF resources.

---

<sup>14</sup> For the FTF too, the same calculation was done: the average distribution over the 2009-2011 period was \$511,149, which would produce an estimate co-financing of \$2,044,596.

- **The Project for Improvement of Medium Wave Radio Broadcasting Network and Disaster Prevention in Tuvalu**

**Co-financing: USD 8,217,751 (JICA – Government of Japan)**

The Government of Japan through JICA is establishing an AM radio broadcasting system which virtually puts every household in all outer islands under single radio coverage. This system replaces the existing FM system whose failure-proneness and maintenance challenge has from time to time put outer islands devoid of outside information for months. With this new system, outer islands will obtain more robust connectivity and a communication channel which could potentially be used especially during and after hydro-meteorological disasters such as cyclones and king tides. The transmission of signals under the new system is centrally managed and the signal will be received directly by households with a radio, rather than relaying via satellite in outer space and an FM receiver located in each island before it reaches households under the current system. The only backup for the current FM system that existed was the landline or satellite phone, both of which are highly susceptible to weather conditions. The AM system is mechanically simpler and it is expected that local communities can take a large part of maintenance responsibilities. However, this baseline project focuses only on the transmission infrastructure at the origin (i.e. Funafuti). The LDCF grant will be used to upgrade the reception facilities at the outer island level, especially within the evacuation facility in each island to increase the response capacity of outer island communities during the time of natural calamities. Furthermore, the upgraded communication facility is likely to enhance the preparedness of coastal communities in securing their livelihoods from less destructive, but more frequent climate events such as sea swells and surges.

- **Tuvalu MDG Planning Project**

**Co-financing: USD 711,964 (UNDP)**

This UNDP-supported project, running from 2008 to 2012, is implemented by the Department of Budget and Planning, Ministry of Finance, to transform the sectoral planning and budgeting processes into those fully aligned with the *Te Kakeega II* and MDGs. All sector plans need to be developed to correspond to key priority(ies) identified in these national goals and staff from the Department, assisted by the project, is providing technical assistance to line ministries at the time of national planning and budgeting process for aligning their plans to these goals. The know-hows they have accumulated over years in “mainstreaming MDGs” into national planning and budgeting provides valuable baseline on which the LDCF project can build as the country moves on to “mainstreaming climate change” and securing dividends of development progress. Close collaboration with both Ministry of Home Affairs and Rural Development (the host of the SGLII project) and the Department of Budget and Planning (the host of the MDG Planning project) is likely to generate synergetic impacts as the project can tap on critical resources they specialize in: Local governance and Planning and Budgeting.

Other relevant projects and programmes that form part of the development baseline for this project include:

- Commonwealth Local Governance Pacific Project – the Commonwealth Local Governance Forum, which is implementing this project, is a partner agency of SLG-II. While the focus of SLG-II is on Kaupule and community-level processes, the CLGF focuses on Falekaupule engagement through the Tuvalu Leadership Dialogue, a bi-annual event bringing together Cabinet Ministers, Members of Parliament, Paramount Traditional Leaders and Presidents of Island Councils. The CLGF Project has also provided a manual for ISP formulation and a number of associated templates to facilitate the process. The proposed LDCF project will revise the ISP formulation manual to integrate climate change risks in the guiding framework of ISPs based on the work done by the CLGF.
- Department of Fisheries initiative of diversifying fisheries-related livelihoods: DoF has invested USD 20,000 to establish a demonstration of pearl oyster farming and inland hatchery for giant clams in Funafuti. For pearl oyster, currently 5,000 spats are being collected to establish a farm. For giant clams, necessary equipment has been procured such as tanks, pumps, plumbing system and lab equipment. This demonstration, if successful, is expected to benefit up to 600 households who are engaging in subsistence fishing and marine resource collection.
- International Cooperation and Development Fund – The Taiwanese Government is the only residential embassy in Tuvalu and has been assisting, since 2004, the productivity enhancement of



the two key livelihoods of agriculture and fisheries through demonstrations. In the fisheries sector, since 2007, they have supported the aquaculture production of milkfish in the outer island of Vaitupu and successfully handed over the operation to the *Kaupule*, and now the same technique is being replicated in Funafuti. The experience they have accumulated over years within the Department of Fisheries from the partnership with RoC constitutes a baseline on which this project can build.

- FAO-led regional Food Security and Sustainable Livelihoods Programme is expected to be on the ground during 2012. DoA and DoF are in the process of proposal submission to FAO and the scope of the project will be determined in due course. This project will have both fisheries and agriculture components and is expected to put in place demonstration sites in outer islands which test a number of techniques to be replicated. The way in which this project will build on this FAO's FSSLP will be detailed during the project formulation phase.

B. 2. [incremental /Additional cost reasoning](#): describe the incremental (GEF Trust Fund) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF financing and the associated [global environmental benefits](#) (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

Consistent with priority adaptation strategies identified by the Tuvalu NAPA, the project requests LDCF to finance the additional costs of increasing the resilience of coastal communities from climate variability and risks through promoting diversified and climate resilient marine-based coastal livelihoods (Component 1) and increasing responsive capacity of communities to anticipated increase in climate change induced hazards (Component 2), within the context of rendering local planning and investment processes in all islands of Tuvalu more climate resilient (Component 3).

### **Component 1: Implementation of community-based climate resilient coastal livelihood options to reduce vulnerability to future climate change**

**Baseline:** The economic base of Tuvalu is changing. The limited natural resource base, small size of the country and remoteness from international markets have forced the Government to rely on incomes from service-oriented economic activities such as: Fee earnings from fishing license and internet domain of “.tv”, remittances from overseas, and revenues from the management of the Tuvalu Trust Fund and Falekaupule Trust Fund. As a result, there has been a strong migration trend to Funafuti from outer islands in recent years. Between 1991 and 2002, the population of Funafuti grew by 17% while average population for the eight outer islands declined by 2.6%<sup>15</sup>. On average, agriculture, forestry and fisheries contribute to less than 20% of the national income and 40% of employment. However, the government recognizes that subsistence farming and fishing continues to provide the primary source of people's dietary needs, which is not accurately captured in the national accounting system. It is estimated that about 75% and 90% of all households are engaged in agriculture and fisheries activities, respectively. The degree of self-reliance is likely to be significantly higher in outer islands. It is for this reason that, irrespective of the changes in the economic base, the *Te Kakeega II* specifically states that reversing the decline in subsistence agricultural and fisheries production is a key policy objective.

For example, a marine resource survey undertaken by the SPC in 2004-2005 in four islands of Tuvalu (Funafuti, Nukufetau, Vaitupu and Niutao) found that almost half of the households surveyed derive their primary or secondary income from marine resources. Fishing or collection activities predominantly take place near-shore, within the lagoon or around fringing reef. Common fishing practices are largely traditional methods of netting and rod fishing on the coastal reef, handlining and spearfishing on the outer reefs with limited use of aquaculture. Average annual per capita consumption of fresh fish ranged from 118kg to 185kg which is 2.5-6 times higher than the regional average indicating Tuvalu's significant reliance on marine resources.

---

<sup>15</sup> Tuvalu 2002 Census.

Agricultural extension workers and staff in Community Fisheries Centers<sup>16</sup> are in principle responsible for applying new production techniques on the ground and collecting knowledge on traditional production practices and coping mechanisms. However, the latest know-hows in enhancing and securing existing livelihoods from creeping changes in the surrounding environment do not reach island-based *Kaupule* or extension officers, and as a result communities are often deprived of access to new production practices that may be available.

The combined impacts of anthropogenic and climate change induced factors are already part of the “business as usual” conditions that encompass the subsistent coastal livelihoods in Tuvalu. While there is limited scientific evidence of the changes in marine resource productivity, observations revealed during the consultations for the NAPA formulation and National Climate Change Policy, indicate that there has been noticeable reduction in marine resources in recent years. A combination of causes such as overharvesting, weakening of coral reefs from ocean surface water temperature, pollution of lagoons from untreated human waste and destruction of fisheries habitats after tropical cyclones and hurricanes, are all contributing to declining productivity. All islands of Tuvalu have a system where everyone has equal access to sea resources, and although the Marine Conservation Act provides a framework for sustainable use of marine resources, in reality, all resource management decisions pertaining to marine areas falls under the purview of the *Falekaupules* and the local rules and by-laws that they establish. These informal rules, such as mesh size restriction or seasonal ban on fishing in certain areas, are based on neither the assessment of long-term trends in fish stock changes nor the future impacts of climate change, such as habitat losses. The recent trends of establishing community-based Marine Protected Areas, promoted by UNDP/GEF Small Grant Programme, are in line with the increasingly utilized approach of ‘co-management’ fully involving communities as resource owners. The programme so far has assisted in designating 75.93km<sup>2</sup> of areas as MPAs of which 75.66km<sup>2</sup> is marine areas in seven islands.

**Additionality:** In Component 1, the LDCF resources will be used to implement community-based adaptation measures in 18 villages, benefiting 2,000 people, to strengthen and diversify marine-based coastal livelihoods against future impacts of climate change. The adaptation measures will include, but not be limited to, installation of near-shore cage farming for mariculture; establishment of in-land spawning or hatchery sites for shellfish and brackish aquaculture; introduction of climate resilient seaweed production; or community-level construction of natural and low-cost wave attenuation structures. The specific measures to be employed will be determined through synthesis of existing vulnerability assessments (undertaken by the first NAPA follow up project and a number of other donor funded initiatives) and as part of the participatory ISP formulation process which will be supported under Component 3. These measures will all contribute to diversifying and making coastal livelihoods less vulnerable to the impacts of climate change – both slow changes in climate parameters such as ocean surface temperature rise or coral bleaching or sudden onset of disasters which cause destruction of coastal marine habitats or livelihood assets. For example, currently, shellfish and other marine invertebrate species are collected during low tides in shallow lagoons or on fringing reefs. However, with the increasing surface water temperature and decreasing natural habitats for these species, it is becoming increasingly more difficult to continue with their traditional harvesting and sustain their subsistence livelihood. In-land spawning and hatchery of shellfish or other species of fish augments breeding capacity of marine species while reducing the exposure of habitats to sea swells or king tides (Chen et al., 2008). Aquaculture and mariculture is currently under-utilized in Tuvalu but in-shore cage farming has potential to be introduced at a large scale as demonstrated in Vaitupu and Funafuti with the assistance from Taiwanese aid. It can use an emerging technology of submersible cages that is proven to reduce significantly the impacts of cyclones or king tides as the cage structure can be submerged underwater during cyclones and king tides. As part of this subcomponent, trainings will be provided, specifically targeting *Kaupules*, CSOs, Community Fisheries Center members and households engaging in subsistence fishing activities, on climate resilient design of coastal livelihoods and climate resilient

---

<sup>16</sup> A CFC was set up in each of the nine islands in Tuvalu to support the fisheries sector development. It is usually equipped with an ice making machine and a freezer, and was originally managed by the State (the Department of Fisheries). With the ongoing devolution, the hand over process to *Kaupules* is ongoing and complete in four islands.

livelihood practices. These trainings are expected to benefit at least 2000 individuals in all of the nine islands of Tuvalu. The technical assistance in climate resilient fisheries practices will be sought and provided in partnership with CROP agencies or other specialized agencies such as SPC and FAO. Developing the technical capacity of CFC staff is expected to generate longer-term impacts. The arrangement for the partnership will be explored during the PPG phase.

Concrete investments to strengthen and diversify coastal livelihoods are complemented by efforts to enhance the management capacity of communities to utilize and secure natural marine habitats and ecosystems from creeping climate change impacts. In particular, the capacity of community members including Kaupule officials, Community Fisheries Center officers and CSOs will be enhanced to designate, manage and monitor community-managed ecological buffer zones<sup>17</sup> that protect marine resources from emerging climate risks. For example, management practices and by-laws for the existing or newly designated MPAs need to be revised/formulated on the basis of island-wide vulnerability assessments, surveys on changing marine resource stocks due to climate change, and ongoing changes in habitat change. For example, average coral cover<sup>18</sup> in Tuvalu is reported to be 65% out of the total of 710km<sup>2</sup> of reefs in the country<sup>19</sup>. With an increasing ocean surface temperature and climate induced disasters, however, this critical habitat for marine resources is likely to shrink, and yet, local communities are not effectively engaged in monitoring of the changes even within MPAs. Inability to monitor the status of natural marine ecosystem limits local community's capacity for 'adaptive management' in a changing climate. Complementarity between investments for climate resilient coastal livelihoods described above and ecological buffer zones is expected to be high as communities will be able to, for example, grow larvae of certain species in breeding sites until their tolerance to higher temperatures increases and release to such buffer zones. A case study undertaken by ADB and GoT on the existing conservation area in Tuvalu (Funafuti Conservation Area) indicates positive impacts on ecosystems functions such as an increase in coral cover and fish stocks since the conservation area was first designated in 1996 (ADB and GoT, 2003). The LDCF resources will be used to enhance the capacity of local communities to expand the success of these initiatives in the form of ecological buffer zones that integrate climate risks in the management and monitoring of marine resources with explicit intent to bring about co-benefits from the concrete investments into enhancing marine-based coastal livelihood options proposed as part of this component.

As part of the capacity building exercise, the methodology of SPC's ongoing work on profiling the level of marine resources in Funafuti, will be reviewed and applied to existing MPAs to ensure effectiveness in the context of emerging climate change. Accompanying rules and by-laws will also be revised/formulated and assign specific responsibility for monitoring the implementation of the plans. It is currently estimated that additional 50km<sup>2</sup> of buffer zones will be designated as part of the project activity, contributing to having established the total of 126km<sup>2</sup> of buffer zones/MPAs (about 18% of the total reef areas) that are managed by communities in a manner that is resilient to a changing climate. The capacity building exercises proposed with the LDCF resources will target, inter alia, Community Fisheries Center officers and community members, as it has been done by SPC, so that the lasting impacts of such exercises are ensured.

To address the challenge of long-term maintenance of climate resilient livelihood assets supported in this component, and public assets delivered in Component 2, the project will work closely together with each of Kaupules to establish a financial incentive mechanism in which small portion of funds from the Falekaupule Trust Fund is set aside annually for the maintenance of the assets and also for a source of co-financing contributions from the community. This is envisioned to increase the ownership and longevity

---

<sup>17</sup> The term "ecological buffer zone" is used in this proposal to distinguish the purpose of such zones from existing marine protected areas. Whereas existing MPAs tend to apply blanket bans on fisheries activities without proper analyses in maximum sustainable yields and changes in fish stocks, ecological buffer zones will build on and expand the notion of MPAs with an emphasis on the sustainable use and management of marine resources.

<sup>18</sup> Measured by the proportion of reef surface covered by live stony coral instead of sponges, algae, or other organisms.

<sup>19</sup> Status of the Coral Reefs of the World. 2008.

of the results delivered through this project. Further details will be investigated during the project formulation phase.

These investments will be codified in the form of best practice manuals and widely disseminated. In the designing of climate resilient coastal livelihood practices and community-management plans, a particular emphasis will be placed on gender dimensions of climate change and management of coastal resources and related training and awareness events delivered at the national and island levels.

## **Component 2: Enhanced communication of climate risks, connectivity and coordination to increase the response capacity of outer islands to increasingly frequent storms**

**Baseline:** For this small developing island state, hydro-meteorological hazards have been the primary cause of disruptions of life and damages to assets and livelihoods in Tuvalu. Between 1990-2005, Tuvalu was plagued with 14 major tropical cyclones with considerable economic and material losses to the society. In 1972, Cyclone Bebe hit the main island of Funafuti and the combined impacts of strong winds and tidal waves destroyed 98% of houses and 100% of food crops. In 1997, Cyclone Keli (category 3 under the Australian Tropical Cyclone Intensity Scale) hit Tuvalu leaving the largest damage to the southernmost island of Niulakita. All physical structures except a church were flattened to the ground and livelihood assets completely damaged. All communication channels, let alone food and water supplies, were completely disconnected for five days during which the fate of 55 residents remained unknown until the New Zealand Air Force plane delivered emergency supplies.

The fact that these relentless cyclones caused no human casualties shows the inherent resilience of these island communities, besides some luck factors<sup>20</sup>. Social capital in these closely-knitted societies has been almost the only asset they could rely on at the time of natural disasters. The record shows that smaller scale hydro-met events are also increasing in frequency and/or intensity such as the 2002 and 2004 king tides during which people in low-lying areas (coastal areas for those on atoll islands; inland areas for those on table reef islands) had to seek refuge to higher grounds. King tide itself is not a climate change induced phenomenon, but anecdotal evidence suggests that the extent of inundation is increasing in recently years, perhaps compounded by the effects of sea level rise. These events leave deep scars to the livelihood assets and infrastructure from which communities spend months, if not years, to recover.

As it was described earlier, the conventional approach to hydro-met disasters and episodes in Tuvalu has been largely reactive in nature, rather than anticipatory. As it was presented in the earlier table, the connectivity with the outer islands remain highly vulnerable to weather conditions and potential breakdowns, and provision of real time information to Island Disaster Committees before and during the disaster event remains a major challenge. Recently, investments have been made, through public and donor funds, to strengthen potential evacuation facilities and connectivity of outer islands. The primary school in each of the eight outer islands, except one, has been upgraded to a concrete multi-story building with the intent to potentially double it as an evacuation facility. With assistance from JICA, AM radio network is currently being constructed, which will provide a more robust connectivity. The National Disaster Management Plan and JNAP that is currently being reviewed provides more anticipatory, rather than reactive, guiding framework for future disasters.

**Additionality:** Under Component 2, LDCF resources will be used to make concrete investments to enhance the institutional capacity to effectively respond to increasing and intensifying climate change induced risks. The investments will cover all inhabited islands of Tuvalu.

Building on the Government's initiative which constructed a concrete-made school building, the project will upgrade this facility in each of the island to act as a full-fledged multi-purpose evacuation facility. The construction of school provides only part of the necessary hardware: All key emergency response infrastructures, especially communication facilities – satellite phone and the public announcement system

---

<sup>20</sup> NAPA notes that the most intensive phase of Cyclone Bebe passed Tuvalu during the low-tide and the overtopping that did happen happened during a more subdued phase of the disaster.

– are currently located in *Kaupule* building and thus at the time of an emergency/disaster, the *Kaupule* building becomes a make-shift emergency control center, while everyone else is now expected to evacuate to the school. The project, therefore, intends to centralize the key disaster response infrastructure to the most robust building on the island – the school building. Furthermore, the AM radio reception facility in outer islands will be upgraded to ensure 24-hour reception capacity at least in the main evacuation facility. While the construction of the AM radio network provides a hardware to enable the reception of signal from the capital 24 hours, in practice, the electricity generation in outer islands is terminated from 10PM-6AM during which time the connectivity would be completely lost if the alternative channels – satellite phones and landlines – fail. Thus, the LDCF resources will be used to enhance the round-the-clock connectivity of the multi-purpose evacuation facility with solar- or battery-powered AM radio and a large antenna to ensure connectivity.

Furthermore, the centrally managed early warning system that connects outer islands through AM radio or satellite will be provided with LDCF resources. As described earlier, the current early warning dissemination channel involves too many stakeholders, connected with highly vulnerable modes of communications. In addition, all households have an electricity-powered radio which cannot be used during the night. While the details of the specifications of the early warning system will be investigated during the project formulation phase, one option is to provide each household with solar- or battery-powered radio which also receives disaster signals sent from the capital and automatically switches to particular frequency for early warning information<sup>21</sup>. This would skip all the intermediaries that currently exist in transmitting disaster information described in Table 1 and enable communities to immediately react to emerging climate induced risks. This is expected to supplement the robust information system that would be provided to evacuation facilities. A reliable early warning system is expected to protect not only human lives, but also livelihood assets which are provided under Component 1. As described in earlier section, the project proposes to install adjustable cage farming to strengthen the coastal livelihoods of island communities. The operation of the cage farming can anticipate upcoming cyclones or sudden sea swells, by fully submerging the assets, if an EWS sends a signal to fishers.

While concrete investments will be financed by LDCF resources to enhance the response capacity of the Government and communities, the baseline policy framework for disaster risk management will also be strengthened and expanded by formulating an island-level disaster response plan with specific information protocols and designation of roles and responsibility of all stakeholders involved during times of disasters including DMO, Island Disaster Committees, National Disaster Committee, and National Disaster Controller. The protocol would define the roles and responsibilities (“who does what?”) for the following chain of events:

- Receipt of early warning
- Dissemination of information within the island
- Evacuation
- De-warning

This will be supplemented by scheduled (e.g. monthly) emergency evacuation drills to raise awareness about the island disaster response plan and test new equipment such as radio and the early warning system. The drills will connect the central stakeholders, especially DMO, as well.

### **Component 3: Inclusive local planning, budgeting and budget execution for strengthened climate resilience**

**Baseline:** Development of Tuvalu is promoted around the two strategic pillars: the Te Kakeega II providing the foundation for national strategy, while collection of Island Strategic Plans in each of the nine outer islands providing the foundation for outer island development strategy. The promotion of the national strategy has been supported by UNDP’s MDG Planning Project which has been assisting line

---

<sup>21</sup> A similar radio network and receiver has been tested in Japan for early warning system. The project will further investigate this option during the PPG.

ministries mainstream MDG concerns (which corresponds to the *Te Kakeega* priorities) into their corporate planning and budgeting.

With regard to the promotion of outer island development strategy, underpinned by the *Falekaupule Act 1997* and by the aspiration of the *Te Kakeega II* for good governance and development of *Falekaupules* and *Kaupules*, the devolution of authority to outer islands has been promoted in the last 15 years. The genuine development needs of local communities are increasingly reflected in their Island Strategic Plans and its budgeting process. Behind this trend is an underlying notion that development of outer islands, where half of the population resides, constitutes the backbone of the whole country. UNDP's long-standing assistance in local governance reform has fostered an enabling environment to engage even greater segments of society into the broader context of increased local administration transparency and accountability. This includes the current effort to enhance the engagement of women and youth groups and CSOs into the island strategic planning process.

The Island Strategic Plan is now recognized as the guiding framework for development strategies for each of the outer islands and the Capital Investment Plans as more specific annual budgeting tool that is revised each year. UNDP is the primary partner providing support in this regard. A legal officer and financial officer in the SLG programme are assisting *Kaupules* to facilitate involvement of local communities in development planning and smooth financing of ISPs through the existing government mechanism of the Special Development Expenditure.

Progress made in this regard has also expanded financial horizons for outer islands. The Special Development Expenditures provide the national budgetary mechanism to assist financing for outer island development needs. While there have been fluctuations, over the last three years, USD1.2-2.1 million have been allocated annually specifically for this purpose supplemented by Block Grants to finance operational expenses of about USD350,000 per year (i.e. USD43,750 per island per year). In addition, the *Falekaupule Trust Fund* provides a mechanism outside the government budgetary system to supplement the financing needs of outer islands. Over the last 10 years, the FTF has financed the total of about USD700,000 to each outer island, or about USD70,000 per year per island.

However, the degree of progress of ISP formulation and financing through CIPs vary considerably across outer islands and so does the quality and specificity of these plans. For some islands, ISPs remain more generic and thus the investments financed by SDEs are not fully guided by the Strategic Plans and CIPs. Currently, these programmes are focusing on, among others, streamlining the planning process as well as introducing a more structured reporting of the implementation of priority actions. There is also much room to improve the alignment of ISPs with the *Te Kakeega II* as the ISP cycles currently vary from island to island and are not necessarily synchronized with the *Te Kakeega II* cycle of 2005-2015. Moreover, given the relatively early stage of the governance reform process, which naturally takes a great deal of time, the level of representation by different segments of society remains insufficient. SLGII is making strides to engage women and youth in the development planning. However, the voices of other community groups such as Island Disaster Committees are currently underrepresented in the priorities of the Island Strategic Plans. Inability to integrate climate-induced disaster risks into a forward-looking development plan, and instead being reactive to such risks, is a critical bottleneck in strengthening community's resilience to climate change and increasing response capacity to climate risks.

Furthermore, the concept of climate proofing livelihood options and doing this through outer island development process is rather a new concept both nationally and locally. The NAPA 1 project is currently bringing climate risk considerations, in the context of coastal management and securing agriculture and water, into the ISP formulation process by analyzing the extent to which the existing ISPs contain references to climate change risks and response measures. Measures to facilitate adaptation in these sectors are identified by the project and *Kaupules* are supported to add these measures to the ISPs as necessary. While this is positive progress in climate proofing the island development processes, adaptation measures are included retroactively rather than produced as part of the fully climate resilient ISP process.

At the national level, NAPA1 is assisting revising the *Te Kakeega II* to integrate climate risks so that the

national strategic principles reflect more accurately the risks the country faces in the future. At the same time, climate-sensitive planning and budgeting does not yet cascade down to ministry level, which limits the public service delivery potential of these ministries to outer island communities.

**Additionality:** Component 3 will transform the whole island development process – the planning of the ISP, formulation of the CIP for budgeting, financing through Special Development Expenditures, and executing and monitoring by the *Kaupule* – into a more climate resilient process by building on existing initiatives of SLGII and NAPA1. SLGII will provide a platform on which to bring together national and island officials including the Island Development Coordinating Committee, Island Disaster Committees (IDCs), local communities and other stakeholder for more inclusive, locally-driven decision making. The project will make use of this platform to deliver capacity development exercises for at least 100 national and island officials, local communities, CSOs, island disaster committees, Women’s Council, youth groups and other stakeholders, to better understand climate risks for future island development and to integrate priority adaptation measures into ISPs and their budget in CIPs. The technical trainings provided under Component 1 and disaster risk management trainings under Component 2 will provide useful hands-on examples that need to be fully reflected in “climate-resilient” development planning. Engaging IDCs will also strengthen a critical linkage between island development processes and forward-looking disaster risk management. Through the project assistance, *Kaupules* will also have enhanced capacity to monitor and evaluate the progress of the ISP execution in an annual cycle.

At the same time, the project will review and revise the manual and templates that are currently being devised by SLGII and Commonwealth Local Governance Forum for more streamlined ISP process, and incorporate the assessment of and response to climate change risks as an integral part of the ISP process. The project will ensure that the climate change vulnerability assessments that are undertaken as part of NAPA1 and other initiatives are synthesized and inform the ISP process and gender-differentiated impacts of climate change will also be fully reflected in the decision making process. The revised manual would help ISPs to be more responsive to the *Te Kakeega* by aligning the execution cycles of the national and island development plans, which are not necessarily synchronized at the moment.

To complement island-level climate resilient planning processes, relevant ministries’ planning and budgeting processes will also be reviewed and revised to integrate climate risks and be more responsive to the revised ISPs. These ministries include, inter alia, the Ministry of Natural Resources, Ministry of Home Affairs and Rural Development and Disaster Management Office. UNDP’s ongoing MDG Planning Project will provide the entry point for this – the platform it has established to integrate MDG concerns into relevant ministry’s planning and budgeting will be directly utilized to include climate risks into such planning and budgeting exercises.

With the enhanced ISP decision making, budgeting, planning, execution and monitoring processes, the project will assist *Kaupules* in using the ISP to leverage external development funds. This includes not only part of the LDCF resources in the context of strengthening marine-based coastal livelihood options (Component 1), but also the *Falekaupule* Trust Fund and other donor assistance to invest in a wide range of adaptation measures as identified in the ISP. The intent is to use part of the LDCF resources not only to establish a mechanism to integrate climate risks as an integral element of outer island development process, but also to use the project as a thrust to start leveraging external funds for this purpose in a very visible manner. As Tuvalu anticipates future inflow of climate change adaptation funds from global vertical funds, bilateral donors, and potentially the private sector, the mechanism this LDCF project proposes to put in place can have a transformational impact as the country will have established a platform on which local genuine adaptation needs are identified, integrated into the nationally-driven development process, financed and monitored.

- B.3. Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF). As a background information, read [Mainstreaming Gender at the GEF.](#)":

It is becoming increasingly apparent that investment in disaster risk reduction is cost-effective. Studies conducted by the World Bank and IFRC found that every dollar invested in disaster risk reduction, two to ten dollars are saved in avoided or reduced disaster response and recovery costs. This compares with the UNDP's estimate of one-to-seven cost-benefit ratio in pre-disaster risk management (UNDP Human Development Report 2007). In addition, these calculations do not include the positive impact of enhanced resilience of livelihoods on future response and recovery from climate change induced disasters. In other words, a society with resilient and diverse livelihoods can recover better and faster even when disasters do strike.

This project will deliver measurable socioeconomic benefits to potentially all residents of Tuvalu (9220 as of the last census in 2002) through a provision of a strengthened communication system that is expected to enhance the nation's response capacity to climate disaster risks. With proper maintenances for sufficient durations, for which the project envisions to put in place certain measures, the socioeconomic benefits of strengthened connectivity and timely information on climate risks to outer islands, in the form of avoided costs of loss of lives, livelihoods and assets, are expected to continue well beyond the project timeframe.

The burden of natural disasters, whether or not they are climate change driven, falls disproportionately on the vulnerable population – outer islands in the national context, and the poor and women within the society – mainly through two channels: Direct impact on human lives; and destroyed livelihood options after the disaster which further reduces their overall resilience. For example, as described earlier, women typically engage in collection of marine resources in the lagoon or on the fringing reefs during the low tide. Activities envisaged under Component 1 directly secure or augment their livelihood options. Component 2, on the other hand, intends to address the risk transmission mechanism by ensuring more reliable communications across outer island communities.

By making community's livelihood options more climate resilient, the project intends to bring concrete benefits of adaptation directly to at least 2000 people in all islands of Tuvalu or approximately 400 households. This is more than 40% of the total households who engage in subsistence fishing activities<sup>22</sup>. Training and awareness raising exercises under Component 1 will closely engage Community Fisheries Centers and Kaupule members who play a catalytic role in disseminating the benefits of climate resilient fishing practices beyond the direct group of beneficiaries. Furthermore, to supplement enhancing/diversifying climate resilient fishing practices, the project intends to establish at least 50 km<sup>2</sup> of community managed ecological buffer zones and modify existing MPA management to be more climate resilient. This, coupled with the concrete investments envisaged in Component 1, is expected to increase the long-term productivity of marine resources in the sub-region contributing to the strengthening of the overall resilience of the society to future climate impact such as increasing disasters and marine habitat losses. Furthermore, given that it's generally women and the elderly who engage in traditional collection of marine invertebrate species, the benefits of adaptation measures on the most vulnerable populations of the society are direct.

The project places a particular emphasis on ensuring sustainability and ownership of the investment made during the project based on the lessons learned from past donor-funded initiatives where the lack of maintenance contributed to shorter lifespan of benefits delivered. Using an existing UNDP national programme (SLGII) as an entry point for the LDCF will ensure that the additional investments made for safeguarding marine-based coastal livelihood assets increase the likelihood of replication in non-project communities or beyond project cycle. By ensuring that the identification, planning and design of these investments are made within the broader context of increased local administration transparency and accountability, the required ownership of project outputs and outcomes by its ultimate beneficiaries is much more likely to be secured in the long-run. Furthermore, the project envisages using the ISPs as a vehicle to leverage external funds for investments in climate change adaptation. This will have a transformational impact in enhancing the local administrations capacity to manage and monitor future influx of climate change adaptation funds from vertical funds, bilateral donors and the private sector.

Gender and the specific role of women in subsistence use of marine resources as well as mitigating climate disaster risks within communities is a critical element of this project. The project will ensure that all key outputs take account of the specific gender related concerns, such as the nexus between natural

---

<sup>22</sup> Tuvalu 2002 Census (<http://www.spc.int/prism/country/tv/stats/Publication/2002%20Census/TUV-Basic%20tables.pdf> – P.96)



disasters and resilience of community. Women are affected differently by climate change than men, and quite often more severely. The gender integration process starts with project formulation which will need to take into account the gender differentiated impacts of climate change, and carry through into the technical capacity development planned under Outcome 1, as well as the design of island level disaster response plan to be formulated under Outcome 2. The project will use the solid platform established by SLG-II conducive to gender mainstreaming into island development process.

B.4 Indicate risks, including climate change risks that might prevent the project objectives from being achieved, and if possible, propose measures that address these risks to be further developed during the project design:

Risk	Level	Mitigation
Extreme climatic events such as cyclones damage adaptation measures being implemented, or weaken the interest of key stakeholders to addressing adaptation issues	I – 3 P – 2	The target sites for implementing adaptation measures in Component 1 will be selected on the basis of, among others, mitigating potential risks from extreme events. For example, measures such as in-land spawning sites or seaweed farming can be developed in islands with a lagoon as it provides a natural buffer against cyclones and surges. On the other hand, submersible cage culture can be developed in islands facing outer ocean as the very design of the submersible cage culture is more resistant to high waves and strong winds. The detail locations of investments will be investigated further during the project formulation phase.
Too many different/divergent stakeholder interests in target sites may prevent efficient consensual decision-making	I – 2 P – 2	Appropriate government agencies, implementing partners and project implementation arrangements are identified and put in place prior to project inception. Furthermore, the National Climate Change Advisory Board, which has been established with support from the first NAPA project includes all the relevant government stakeholders in the members. This platform will be fully utilized to inform stakeholders and ensure that the decision making process and information sharing across the two NAPA follow-up projects is made efficient.
Difficulty in communications with outer islands may become a bottleneck for timely implementation	I – 3 P – 2	The project will put in place island-level community organizer to ensure smooth delivery of activities at the target site. It will also collaborate closely with the first NAPA project especially when planning monitoring visits to outer islands so that the cost of the trip can be shared across the two projects and therefore the frequency of visits can potentially be increased should there be implementation challenge on the ground.
Completion of UNDP's Country Programme in December 2012 may result in insufficient support for achieving project outputs and objective	I – 3 P – 1	Currently United Nations Development Assistance Framework and UNDP's Multi-Country Programme Document for 2013 onward are in preparation. The exact status of the baseline projects that the proposed LDCF project will build on (i.e. SLG-II and MDG project) will be determined during the project formulation stage. Nonetheless, the assistance in local governance reform in Tuvalu and MDG attainment constitute key pillars of UNDP's long standing support and therefore, it is expected that UNDP's assistance in the broad area of Kaupule assistance will continue in one form or another.

B.5. Identify key stakeholders involved in the project including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable:

STAKEHOLDER	RELEVANT ROLES
Department of Environment (DoE), Ministry of Foreign Affairs, Trade, Environment and Labor	The DoE will be one of the key agencies for the proposed LDCF project. They were the principle author of NAPA. The DoE has a mandate to coordinate matters related to climate change. The PMU for the first LDCF NAPA follow up project is housed within DoE and therefore they will provide key lessons to the proposed project. They will also be playing a critical role in providing technical inputs for the design and management of Marine Protected Areas.

Ministry of Home Affairs and Rural Development (MoHARD)	MoHARD is responsible for local government and the caretaker of Island Strategic Plans and Capital Investment Plans. ISPs and CIPs submitted by <i>Kaupules</i> are consolidated by MoHARD and submitted to the Planning and Budgeting Division of the Ministry of Finance for approval. The PMU of SLG-II is also located within the Rural Development Department of MoHARD. They will also act as the primary focal point with <i>Kaupules</i> and therefore, MoHARD will also be a key implementing agency for the proposed LDCF project.
Department of Fisheries (DoF), Ministry of Natural Resources	DoF will be providing technical inputs to Component 1 of the project. With their extension officers based in outer islands, they have provided livelihood assistance in the fisheries sectors through both public and donor funds. Development projects financed through the project Outcome 1 will be executed by DoF with close collaboration with DoE and <i>Kaupules</i>
Disaster Management Office (DMO)	DMO will be one of the key stakeholders of this project. They are housed within the Prime Minister's Office and their primary mandate is to play a coordination role during the time of disasters and to implement disaster management policies during normal periods. They are also responsible for coordinating with Island Disaster Committees.
Kaupule	<i>Kaupules</i> (island councils) will be one of the key stakeholders of this project. In Tuvalu, there are only two tiers of governance: national and <i>kaupules</i> . There are nine islands in Tuvalu (including the main island of Funafuti), and each of eight islands has a <i>kaupule</i> . The ninth island (Niulakita) is under the administration of the eighth island (Niutao), therefore, there are eight <i>Kaupules</i> in Tuvalu. The <i>Kaupule</i> is the executive arm of <i>falekaupule</i> (island assembly – see below) and convenes quarterly assembly where annual development plans and budgets are prepared. They are also the focal point with the central government. Members of the <i>Kaupule</i> are elected by popular votes in each island. Currently 4% of elected representatives is women.
Falekaupule	<i>Falekaupule</i> is the island assembly which comprise of all men on the island with the age of over 50. The decision making power rests with the <i>falekaupule</i> . The ISP in each island needs to be approved by <i>Falekaupule</i> .
Falekaupule Trust Fund Secretariat	FTF Secretariat is based in Funafuti and has been entrusted to manage the FTF. The Fund has a board which is comprised of the representatives from government ministry and chaired by the Minister of MoHARD. The project will potentially make an agreement with respective <i>Kaupules</i> to use the FTF for maintenance and as co-financing sources of the investments promoted in this project.
Bilateral development partners	This project will work closely with, inter alia, JICA, the Embassy of Republic of China and AusAID. JICA is the main source of co-financing for the first LDCF NAPA follow up project. Their ongoing work on establishing the AM radio network is expected to constitute key baseline development for the proposed project. They have a resident advisor embedded in the Prime Minister's Office and therefore smooth coordination can be expected under the proposed NAPA2 project. The Embassy of RoC is the only resident embassy in the country and has provided technical assistance in the agriculture and fisheries. This work provides part of the baseline and co-financing for the proposed project. They also have an advisor embedded in the Department of Fisheries. AusAID is also a key development partner for Tuvalu and the first NAPA follow up project. They have shown their willingness to provide cash co-financing for the proposed LDCF project. The detail of the arrangement will be explored further during the formulation stage. All of these partners are and will be fully informed about ongoing climate change initiatives in the country through the National Climate Change Advisory Board.
Multilateral development partners	In the context of the proposed project, FAO is particularly important because of their technical assistance in the area of fisheries productivity enhancement. Their regional Food Security and Sustainable Livelihoods Programme is currently being designed and the alignment with this project will be ensured during the project formulation stage.
TANGO	TANGO (Tuvalu Association of NGOs) is a consortium of NGOs in Tuvalu. They have experience in working with local communities in designating and managing Marine Protected Areas, through UNDP/GEF financed Small Grants Programme. They are providing to NAPA 1 with their skills in community awareness raising and community mobilization. In outer islands, their support in project implementation will be sought for the proposed project.

Secretariat of the Pacific Community	In the area of marine resource baseline survey, SPC has in the past provided technical assistance in undertaking marine resource surveys. The project will work closely with and tap technical expertise of SPC in formulating climate resilient, community-managed marine protected areas.
--------------------------------------	---

**B.6. Outline the coordination with other related initiatives:**

As described in Section B.1, this proposed project will build on a number of existing initiatives and thereby coordination with the following initiatives will be ensured.

The ongoing LDCF NAPA follow up project, supported by UNDP, is the first climate change adaptation project that is directly responding to NAPA priorities (Priority 1, 2 and 3). NAPA1 presents numerous opportunities for synergies with the proposed NAPA2 projects. First, vulnerability assessments that are carried out under NAPA1 will inform the ISP process which NAPA2 project will support. The NAPA2 project will review existing vulnerability assessments, including the one from NAPA1, and synthesize the results to ensure that the resultant ISPs are fully informed by these existing assessments.

Second, NAPA1 has established the National Climate Change Advisory Board to oversee climate change related projects and to manage, coordinate, and secure finance for community-based adaptation and other response to climate change risks in Tuvalu. The NCCAB provides overall policy guidance and coordination among Ministries, Departments and NGOs involved (including the Ministry of Natural Resources and Environment, MoHARD, and DoE among others). The proposed NAPA2 project will benefit directly from this establishment as the necessary coordination between NAPA1 and NAPA2, as well as cross-ministerial coordination can be smoothly undertaken.

Third, it is expected that coordination with NAPA 1 would also ensure an economy of scale. NAPA 1 is one of the few donor-funded projects that carry out implementation activities in outer islands on a continuous-basis with a dedicated community organizer in each of the outer islands. As NAPA 2 also covers all outer islands, significant travel cost savings can be expected if monitoring visits are undertaken in conjunction. The project formulation phase will explore the possibility of sharing the community organizers between the two projects to ensure maximum coordination and synergy between these two projects and to minimize confusions that may occur within communities.

The project will coordinate closely with UNDP-led Supporting Local Governance programme (SLG-II). The project will use SLGII and as the main vehicle to deliver Component 3 and it provide a numerous entry points of interface with Kaupules and island-level community members. The MoHARD, the host ministry of SLG-II, will act as the overall implementing partner. The project design and implementation arrangement will be made in such a way that their experience and knowledge on the island planning process and national budgeting process (SDEs) will fully feed into the project activities and strategic planning. The MoHARD and PMU of SLG-II will be fully consulted during the project preparation phase and the inception phase to ensure the maximum synergy.

Close coordination will also be ensured with the UNDP-led MDG Planning Project. The Department of Budget and Planning, with support from the MDG project, is providing trainings and workshops to line ministries at the time of budget formation to mainstream the MDGs and *Te Kakeega II* concerns into national planning and budgeting process. The LDCF project will ensure that technical know-hows amassed in the Department in influencing planning and budgeting process will cascade down to the national level, with additional climate risks and opportunities fully captured.

During the project preparation process, a potential of establishing a partnership with the SPC will be explored in detail with the view to build on their experience in assisting the Kaupule in Funafuti to undertake assessments of the stock of marine resources and climate change impacts on the changes in such resources. The LDCF resources will be used to replicate and modify, if necessary, the work of the SPC to assist Kaupules in outer islands. Similarly, the coordination with FAO will be explored during the PPG phase as their proposed regional project on food security and sustainable livelihoods becomes clearer in its focus and target sites.

Technical assistance in the fisheries sectors through the Taiwan's International Cooperation and Development Fund provides useful information on experience in enhancing marine-based coastal livelihoods. A range of new fisheries production techniques are piloted in the capital and expertise from

this initiative will be tapped by this project. Specific techniques that are piloted will be tested for viability under a changing climate and replicated in larger areas. During the PPG phase, potential coordination arrangements between the project and RoC will be investigated.

In addition to these initiatives to which the project will be closely aligned, the project will seek collaboration to the fullest with regional organizations such as SOPAC or SPREP which have extensive track record in providing technical or policy support.

**C. DESCRIBE THE GEF AGENCY'S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:**

UNDP's comparative advantage in implementing this project is underpinned by its Multi-Country Programme Document for the Pacific Sub-region for the current cycle (2008-2012), in which enhanced decentralization of governance and participatory decision making targeting vulnerable groups, are given a particular emphasis. UNDP is playing a leading role in this area based on its long standing and established track record in Tuvalu and the Pacific region in promoting local public administration reform and public service delivery. For strengthening the resilience of island communities to future climate risks, a necessary condition is to establish an environment conducive to greater autonomy within each island supported by technically capable staff and financial capacity.

UNDP's assistance for local governance reform in Tuvalu dates back to 1997 when the Falekaupule Act was enacted and the process of devolution of authority first began. Since 2005, support for more institutionalized outer island development framework has been provided through SLG I and II. Kaupule's capacity to formulate Island Strategic Plans was strengthened and implementation of development projects supported. In the phase II of the project, the focus continues to be the promotion of even greater participation and accountability in the local governance process.

The MDG programme demonstrates another pillar of UNDP's long-standing partnership with the Government of Tuvalu. The programme is assisting relevant line ministries in strengthening their corporate planning and budgeting in line with achievement of the MDG and, ultimately with the Te Kakega II. The platform that the MDG programme has built, along with SLG II, will be fully utilized in both "downscaling" the climate resilient planning process to outer island level and "climate proofing" the ministerial level corporate planning process.

UNDP, in collaboration with TANGO, has been assisting the Government in promoting community-based management of marine resources through GEF Small Grant Programme. So far, UNDP has assisted establishing 75.93 km<sup>2</sup> of MPAs across seven islands. The proposed NAPA2 project will build on this initiative by "climate proofing" the management of MPAs and will establish additional 50 km<sup>2</sup> of ecological buffer zones. The existing partnership with TANGO, reinforced by practical know-how of mobilizing communities for the management of protected area, will be an important advantage UNDP brings in implementing the NAPA2 project. Furthermore, UNDP also played a leading role in establishing the only national conservation area that exists in Tuvalu – Funafuti Conservation Area – with financial assistance from the GEF as part of the Regional South Pacific Biodiversity Conservation Programme in 1996.

UNDP has been supporting the mainstreaming of environmental sustainability into national policies, planning frameworks and programmes; and strengthening institutional support to contribute to sustainable environmental management. This is underpinned by the Multi-Country Programme Document and provides underlying reasons for UNDP's long-standing engagement in the NAPA, INC and SNC processes as well as other requirements for MEAs such as NBSAP. As a result of the partnership with the Government of Tuvalu, UNDP is the implementing agency for the first NAPA follow up project. As described earlier, this puts UNDP in a well-placed position to ensure coordination with the first NAPA follow-up project and support implementation of the second NAPA follow up project in a synergetic manner.

Building on the long-standing development assistance that UNDP has provided to Tuvalu, UNDP is well placed to broker technical expertise that will be sought during the project implementation. During the project formulation stage, a potential collaborative working arrangement with institutions such as SPC or FAO will be investigated to ensure that project overall objective and outcome, especially Outcome1

relating to the strengthening of marine-based coastal livelihoods, are achieved in a cost-effective manner.

Support in these diverse areas has been made possible by UNDP's global support structure. Country office level operations<sup>23</sup> are supported by regional advisory capacity based in the UNDP Asia Pacific Regional Centre in Bangkok. UNDP has dedicated Regional Technical Advisers focusing on supporting adaptation programming and implementation in a range of technical areas relevant to this project including disaster management, livelihoods support, capacity development, and local governance reform. Our network of global Senior Technical Advisers provide additional technical oversight and leadership helping to ensure that programmes on the ground achieve maximum policy impact.

#### C.1 Indicate the co-financing amount the GEF agency is bringing to the project:

UNDP's co-financing will be provided primarily through its SLG programme (USD 766,586) and MDG programme (USD 711,964), both parallel grants. As the country programme cycle is coming to an end at the end of 2012, the next assistance framework is currently being formulated. During the project preparation phase, the scope and specific areas of UNDP's support that are relevant to the proposed LDCF project will be investigated and the co-financing figure modified accordingly.

#### C.2 How does the project fit into the GEF agency's programme (reflected in documents such as UNDAF, CAS, etc.) and staff capacity in the country to follow up project implementation:

This proposed project is fully aligned with UNDAF for the Pacific Sub-region for 2008-2012. It corresponds, inter alia, with UNDAF Outcome 2 "National and regional governance systems exercise the principles of inclusive good governance, respecting and upholding human rights; and resilient Pacific island communities participate in decision-making at all levels" and Outcome 4 "The mainstreaming of environmental sustainability and sustainable energy into regional and national policies, planning frameworks and programmes; and Pacific communities sustainably using their environment, natural resources and cultural heritage."

UNDP Multi-Country Programme Document operates within the broader framework of an UNDAF, and the new assistance framework cycle will begin from 2013. UNDAF and MCPD, by design, are set out to address the Government's development priorities and thus high degree of conformity can be found between the proposed LDCF project and UNDP's overall guiding framework. This project is aligned with MCPD Outcome 2.2 "Decentralization of governance and participatory decision making are enhanced" and Outcome 4.2 "Pacific communities effectively manage and sustainably use their environment and natural resources" and its subordinate Output 4.2.1 "Sustainable livelihoods of vulnerable groups, including women and youth, strengthened through institutional support and leveraging indigenous governance systems, to contribute to sustainable environmental management."

The UNDP Country Office and the Fiji MCO is sufficiently well resourced to provide the oversight and project assurance necessary to support the Government of Tuvalu in implementing its second LDCF NAPA follow up project. UNDP, with financial support from UNICEF and UNFPA, deploys a Tuvalu-based Country Development Manager to enhance its in-country project implementation and policy support. The project will primarily engage the environment and climate change practice area and governance practice area, as well as the Deputy Resident Representative and Assistant Resident Representative for programming. The Fiji MCO has recently recruited a climate change policy advisor who will be making contributions to the project from the policy perspectives.

A regional technical adviser on climate change adaptation based in Bangkok will provide ongoing implementation oversight and support throughout the project, as well as the UNDP lead adviser on

---

<sup>23</sup> Tuvalu falls under the purview of the Fiji Multi-Country Office. However, recently, a Country Development Manager post has been created in Tuvalu with the intention to further strengthen UNDP's in-country assistance and timely response to the Government's needs. The CDM is provided with sufficient oversight and technical/operational backstopping from the Fiji MCO on a continuous basis.


adaptation, also resident in Bangkok.

**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

**A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):** (Please attach the [Operational Focal Point endorsement letter\(s\)](#) with this template. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Mataio Tekinene	Director of Department of Environment; GEF OFP	MINISTRY OF FOREIGN AFFAIRS, TRADE, ENVIRONMENT AND LABOR	11/03/2011

**B. GEF AGENCY(IES) CERTIFICATION**

<b>This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF/LDCF/SCCF criteria for project identification and preparation.</b>					
Agency Coordinator, Agency name	Signature	DATE (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Yannick Glemarec Executive Coordinator, UNDP/GEF		November 3, 2011	Yusuke Taishi (Green-LECRDS)	+66 (2) 304 9100 ext 5015	yusuke.taishi@undp.org