



**REQUEST FOR CEO ENDORSEMENT**

**PROJECT TYPE: FULL-SIZED PROJECT**

**TYPE OF TRUST FUND: LDCE**

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**PART I: PROJECT INFORMATION**

Project Title: Solomon Islands Water Sector Adaptation Project (SIWSAP)			
Country(ies):	Solomon Islands	GEF Project ID <sup>1</sup> :	4725
GEF Agency(ies):	UNDP	GEF Agency Project ID:	4568
Other Executing Partner(s):	Government of the Solomon Islands, Ministry of Mines, Energy and Rural Electrification, Water Resources Division (MMERE-WRD)	Submission Date:	Dec. 20, 2013
GEF Focal Area (s):	Climate Change	Project Duration (Months)	48
Name of parent program (if applicable): For SFM/REDD+ <input type="checkbox"/> For SGP <input type="checkbox"/> For PPP <input type="checkbox"/>	N/A	Agency Fee (\$):	685,000

**A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK<sup>2</sup>**

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount (\$)	Co- Financing (\$)
CCA-1: Reduce vulnerability to the adverse impacts of CC, including variability, at local, national, regional and global levels	1.1 Mainstreamed adaptation in broader development frameworks at country level and in targeted vulnerable areas	1.1.1 Adaptation measures and necessary budget allocations included in relevant frameworks	LDCF	367,586	2,750,000
	1.2 Reduced vulnerability in development sectors	1.2.1 Vulnerable physical, natural and social assets strengthened in response to climate change impacts, including variability	LDCF	1,086,530	6,200,000
CCA-2: Increase adaptive capacity to respond to the impacts of CC, including variability, at local, national, regional and global levels	2.1 Increased knowledge and understanding of climate vulnerability and change – induced risks at country level and in targeted vulnerable areas	2.1.1 Risk and vulnerability assessments conducted and updated	LDCF	487,544	350,000
	2.2 Strengthened adaptive capacity to reduce risks to climate-induced economic losses	2.2.2 Targeted population groups covered by adequate risk reduction measures	LDCF	703,900	14,600,000
	2.3 Strengthened awareness and ownership adaptation and climate risk	2.3.1 Targeted population groups participating in adaptation and risk	LDCF	750,213	1,750,000

<sup>1</sup> Project ID number will be assigned by GEFSEC.

<sup>2</sup> Refer to the [Focal Area Results Framework and LDCF/SCCF Framework](#) when completing Table A.

	reduction processes at local level	reduction awareness activities			
CCA-3: Promote transfer and adoption of adaptation technology	3.1 Successful demonstration, deployment and transfer of relevant adaptation technology in targeted areas	3.1.1 Relevant adaptation technology transferred to targeted groups	LDCF	3,112,359	15,272,462
Sub-Total				6,508,132	40,922,462
Project management Cost (PMC)				341,868	2,700,000
<b>Total project costs</b>				<b>6,850,000</b>	<b>43,622,462</b>

## B. PROJECT FRAMEWORK

Project Objective:						
Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co Financing (\$)
1. Water Sector Climate Change Adaptation (WS-CCA) Planning in the context of Integrated Water Resources Management (IWRM)		1.1 Water Sector – Climate Change Adaptation Response Plans formulated, integrated and mainstreamed in water sector-related and in broader policy and development frameworks	1.1.1 Vulnerability assessments of water supplies (in terms of quantity and quality) to climate change in targeted critical areas refined or formulated  1.1.2 WS-CCA plans prepared in the context of IWRM and in line with and integrated into existing local and national policy and development planning processes  1.1.3 Government budgets allocated to support implementation of key components of WS-CCA plans	LDC F	855,130	3,100,000

<p>2. Implementation of WS-CCA Plans focusing on enhancing existing climate resilient water management capacities</p>		<p>2.1 Increased reliability and improved quality of water supply in targeted areas</p>	<p>2.1.1 Community-level WS-CCA soft and concrete measures implemented to improve sanitation and water supply in times of scarcity, that may include, but not limited to: diversification of water sources; protection and restoration of ecosystems that protect critical water resources; improvements in water-use efficiency and overall demand-side management; use of innovative instruments; building on traditional knowledge; protection of freshwater lens through better sanitation practices in small islands (e.g., composting toilets) (in about 6 sites)</p> <p>2.1.2 Community-based Climate Early Warning and Disaster Preparedness Information System tailored for water resources management developed and implemented in targeted areas (6 sites)</p>	<p>LDC F</p>	<p>1,790,430</p>	<p>20,800,000</p>
<p>3. Implementation of WS-CCA Plans focusing on developing additional climate resilient water management capacities</p>		<p>3.1 Investments in cost-effective and adaptive water management interventions and technology transfer</p>	<p>3.1.1 Strategic investments in water infrastructure in target areas, including but not limited to: new household and communal water storage systems and infrastructure; design and construction of applicable small-scale climate-resilient reservoir in at least 1 site; provision of up to 4 portable water filtration and/or desalination systems for sharing across communities in times of extreme water scarcity</p> <p>3.1.2 Compilation of best practices on applicable technologies for dissemination and replication by project partners with support from the project</p>	<p>LDC F</p>	<p>3,112,359</p>	<p>15,272,462</p>
<p>4. CCA-orientated Governance in the Water Sector</p>		<p>4.1 Improved governance and knowledge management for CCA in the water sector at the local and national levels</p>	<p>4.1.1 Overarching policy and legislation for the water sector that integrates CCA components in IWRM plans drafted and advocated, including guidelines for climate resilient water supply development in vulnerable areas</p> <p>4.1.2 Institutional and community capacities strengthened toward water-sector CCA formulation, implementation and monitoring at the</p>	<p>LDC F</p>	<p>750,213</p>	<p>1,750,000</p>

			national and local levels			
			4.1.3 Multi-media knowledge products on CC, CCA, IWRM, lessons learned and best practices developed and disseminated extensively to communities, schools and the general population and through ALM			
Sub-Total					6,508,132	40,922,642
Project management Cost (PMC) <sup>3</sup>					341,868	2,700,000
<b>Total project costs</b>					<b>6,850,000</b>	<b>43,622,462</b>

### C. SOURCES OF CONFIRMED COFINANCING FOR THE PROJECT BY SOURCE AND BY NAME \$)

Pls include letters confirming cofinancing for the project with this form

Sources of Co-financing	Name of Co-financier (source)	Type of Co-financing	Cofinancing Amount (\$)
National and Provincial Government	National Water Sector Budget, Choiseul and Malaita Provincial Budget	In-kind	3,592,462
GEF Agency	UNDP	Grant	6,400,000
Other Multilateral Agency (ies)	EU EDF10 Sector Support AusAID	In-kind	23,370,000
		In-kind	10,260,000
<b>Total Co-financing</b>			<b>43,622,462</b>

### D. TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY<sup>1</sup>

GEF AGENCY	TYPE OF TRUST FUND	FOCAL AREA	Country name/Global	(in \$)		
				Grant amount (a)	Agency Fee (b) <sup>2</sup>	Total c=a+b
UNDP	LDCF	Climate Change	Solomon Islands	6,850,000	685,000	7,535,000
<b>Total Grant Resources</b>				<b>6,850,000</b>	<b>685,000</b>	<b>7,535,000</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. PMC amount from Table B should be included proportionately to the focal area amount in this table.

<sup>2</sup> Indicate fees related to this project.

<sup>3</sup> PMC should be charged proportionately to focal areas based on focal area project grant amount in Table D below.

**F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:**

<b>COMPONENT</b>	<b>GRANT AMOUNT (\$)</b>	<b>COFINANCING (\$)</b>	<b>Project Total (\$)</b>
International Consultants	453,700		453,700
National/Local Consultants	878,121		878,121

**G. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? (select)**

(If non-grant instruments are used, provide in Annex D and indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

**PART II: PROJECT JUSTIFICATION**

**A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF<sup>4</sup>**

- No significant changes in alignment with the project design of the original PIF have been made. The following changes were made during the PPG phase to the arrangement of Outcomes and Outputs:
- The Outcome 2.2 in the PIF “Investments in cost-effective and adaptive water and sanitation management and technology transfer” was rearranged to be Outcome 3 in the project document. Furthermore, the “sanitation management and technology transfer” will be completed by delivering Outcome 2.1 “Increased reliability and improved quality of water supply in targeted areas” in the project document. This is to accommodate the change of Outcome 2.2 in the PIF to Outcome 3 in the project document, as this activity was no longer suited to Outcome 3.
- The Output 2.1.1 in the PIF “Community-level WS-CCA soft measures implemented to improve sanitation and water supply in times of scarcity, that may include, but not limited to: diversification of water sources; protection and restoration of ecosystems that protect critical water resources; improvements in water-use efficiency and overall demand-side management; use of innovative instruments; building on traditional knowledge (in about 6 sites)” has been re-worded as Output 2.1 “Community-level WS-CCA soft and concrete measures implemented to improve sanitation and water supply in times of scarcity, that may include, but not limited to: diversification of water sources; protection and restoration of ecosystems that protect critical water resources; improvements in water-use efficiency and overall demand-side management; use of innovative instruments; building on traditional knowledge; protection of freshwater lens through better sanitation practices in small islands (e.g., composting toilets) (in about 6 sites)” in the project document. Similarly, Output 2.2.1 in the PIF “2.2.1 Strategic investments in water and sanitation infrastructure in target areas, including but not limited to: enhanced household and communal water storage systems and infrastructure; design and construction of applicable small-scale climate-resilient reservoir in at least 1 site; provision of up to 4 portable water filtration and/or desalination systems for sharing across communities in times of extreme water scarcity; protection of freshwater lens through better sanitation practices in small islands (e.g., composting toilets)” has been reworded as Output 2.2 “Strategic investments in water infrastructure in target areas, including but not limited to: new household and communal water storage systems and infrastructure; design and construction of

<sup>4</sup> For questions A.1 – A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter ‘NA’ after the respective question

applicable small-scale climate-resilient reservoir in at least 1 site; provision of up to 4 portable water filtration and/or desalination systems for sharing across communities in times of extreme water scarcity.” in the project document. This is to align with the above change of Outcome 2.2 in the PIF Outcome 3 in the project document.

- The indicative co-financing in the PIF totaled US\$ 40, 255, 000. After further consultation with government and other co-financers during the development of the project document, the amount of co-financing has increased to US\$ 43,622,462.

### **A.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.**

The text from the PIF has been further developed and additional strategies and plans of relevance have been added. Please see Section 2.2 of the LDCF project document for further details.

### **A.2 GEF focal area and/or fund(s) strategies, eligibility criteria and priorities.**

- The project is aligned with LDCF/SCCF focal area objective 1 (GEF/LDCF.SCCF.9/4/Rev.1) – to ‘reduce vulnerability to the adverse impacts of climate change, including variability at local, national regional and global level’, objective 2 – to ‘increase adaptive capacity to respond to the impacts of CC, including variability’, and objective 3 – to ‘promote transfer and adoption of adaptation technology’. The project will start with the assessment of vulnerabilities in the water sector (Output 1.1.1 relevant to CCA-2) which will provide the context for the Water Sector Climate Change Adaptation (CC-A) plans. The WS-CCA plans that will be formulated within the IWRM framework (Output 1.1.2 relevant to CCA-1) will be mainstreamed in broader development frameworks, particularly at the relevant geopolitical unit (district) of the project sites and up-scaled at the national level (Outcome 1.1). The process of mainstreaming (Output 1.1.3 relevant to CCA-1) will target on the allocation of necessary budget to implement the adaptation frameworks/plans although the plans will be implemented with LDCF support. The implementation of the plans will reduce the vulnerability to climate change of the water-dependent development sectors (Outcomes 2.1 and 2.2 and associated Outputs relevant to all CCA objectives), specifically through investments and improved provision and access to clean drinking water and sanitation, better water management practices and institutions of integrated disaster response measures to extreme climate events. New technologies to improve community-level water sector resilience in the context of climate change will be employed and transferred to the beneficiaries and the private sector, as appropriate to facilitate replication. The long-term reduction of vulnerability to the adverse impacts of climate change in the water sector will be addressed through improved governance and replication of lessons learned within the country (Outcome 3.1 and associated Outputs primarily relevant to CCA-2).

### **A.3 The GEF agency’s comparative advantage:**

The text from the PIF has been further developed to strengthen the description of UNDP’s comparative advantage. Please see Section 2.3 of the LDCF project document for further details.

### **A.4 The baseline project and the problem that it seeks to address:**

- The following baseline projects seek to address the major problems in Solomon Islands, which are summarised in the following points:
- The Solomon Islands Water, Sanitation and Climate Outlook (Low 2011 – draft) describes the poor state of affairs regarding water resource management in the country. According to the report, water

and sanitation are in a state of neglect with significant gaps in governance and institutional arrangements and very limited human and financial capacity.

- The impacts of climate change have severe consequences on water and sanitation in the country. Freshwater lenses are predicted to reduce in size due to increased demand and reduced rainfall. At the same time, temperature readings are showing general warming. The country is vulnerable to long dry spells associated with the warm phase of the El Niño-Southern Oscillation (ENSO). Intrusion of salt water from rise in sea level has affected groundwater resources, especially freshwater aquifers (lens) in small atolls and low-lying islands that rely on rainfall or groundwater for their freshwater supply.
- The generally weak water governance in the Solomon Islands does not enable the country to respond effectively to emerging challenges, including climate change. The Water Outlook report (mentioned earlier) attributed the state of neglect in the water and sanitation sector to the significant gaps in governance and institutional arrangements and very limited human and financial capacity.
- Government capacity is already limited to dispense basic functions and even worse, to address emerging issues such as climate change. Both supply and demand side management approaches do not yet integrate climate change impacts and IWRM approaches.

The LDCF project will build on the ongoing activities of selected baseline projects described below.

- The **Solomon Islands Access to Clean Water & Sanitation Initiative (SIACWSI)** is an ongoing initiative started in 2008 with development partners and the MHMS. AusAID is a lead donor to the Health Sector, providing around AUD \$20m a year, and has supported the development of the National Health Strategic Plan 2011-2015 which prioritizes rural WASH. Support for SIACWSI is provided through sector health support. SIACWSI is designed to mobilize rural WASH activities with other development partners, such as the EU improved governance and access to WASH for rural people sector support to MHMS. SIACWSI aims to (i) increase coverage of WASH in rural areas, (ii) improve sector coordination, capacity and equity, (iii) establish sustainable and inclusive operation and maintenance models, and (iv) establish sustainable systems for improved hygiene awareness and to create demand for socially inclusive sanitation.
- **Provincial Governance Strengthening Project (PGSP)** – This project implemented by UNDP and funded by UNDP together with other donors (UNCDF, EU and AusAID) is strengthening the capacity of Provincial Governments to plan and implement development programmes as well as in administration of provincial affairs. It covers 9 provinces in the Solomon Islands. One of the objectives of PGSP that is relevant to this proposal is the development of a Monitoring and Evaluation system which could be utilized by SIWSAP. The SIWSAP will need to work closely with provincial governments for the planning and implementation of provincial based projects. Provincial governments also fund water supply projects and there is the opportunity for SIWSAP to assist Provincial governments mainstream IWRM and CCA, which represents a concrete area for collaboration.
- **Integrated forest management in the Solomon Islands** – This project is currently being developed by FAO in partnership with the Ministry of Environment, Climate Change, Disaster Management and Meteorology, Ministry of Forest and Research, and Ministry of Agriculture and Livestock to be funded by GEF. The proposed project aims to improve the management of forest in the Solomon Islands by integrating biodiversity conservation, sustainable forest management (SFM) and climate change issues at the national level and livelihood activities of local communities living in and around

forests. As forest management relates closely with enhancing quality and quantity of water resources, SIWSAP will work closely with the development and implementation of this project to ensure synergies and alignment at both national levels and in the pilot sites.

**A.5 Incremental / Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:**

- The overall project objective is to improve the resilience of water resources to the impacts of climate change in order to improve health, sanitation and quality of life, and sustain livelihoods in targeted vulnerable areas of the Solomon Islands. The project will achieve this objective through four outcomes:
  1. Water Sector – Climate Change Adaptation Response (WS-CCAR) plans formulated, integrated and mainstreamed in water sector-related and in broader policy and development frameworks – using action at the Provincial level to mobilize national level policy frameworks;
  2. The increased reliability and improved quality of water supply in targeted areas under Outcome 1, but also through investments at replication sites;
  3. Investments in cost-effective and adaptive water management interventions and technology transfer through replication and scaling up approaches, and
  4. Improved governance and knowledge management for Climate Change Adaptation in the water sector at both the local and national levels.
- The project structure consists of four Outcomes. Outcome 1 will focus on Water Sector Climate Change Adaptation Response Planning, using the framework of Integrated Water Resources Management (IWRM) to guide adaptation in the overall water sector through the development of Water Sector Climate Change Adaptation Response (WS-CCAR) Plans in six pilot provinces and communities as well as replication sites. Outcome 2 will implement these WS-CCAR plans at a series of Pilot sites focusing on increasing reliability and improved quality of water supply in target sites. Outcome 2 will support interventions that enhance existing water resilience such as diversification of water sources; protection and restoration of ecosystems that protect critical water resources; improvements in water-use efficiency and overall demand-side management; use of innovative instruments; building on traditional knowledge; protection of freshwater lens through better sanitation practices in small islands (e.g., composting toilets). In addition, community-based Climate Early Warning and Disaster Preparedness Information System tailored for water resources management will be designed and implemented through a participatory process in the pilot sites. Outcome 3 will also support the implementation of WS-CCAR Plans in pilot sites, but focusing on investing in additional cost-effective adaptive water management and technology transfer. Strategic investments will be made in water infrastructure in target areas, including but not limited to: new household and communal water storage systems and infrastructure; design and construction of applicable small-scale climate-resilient reservoir in at least 1 site; provision of up to 4 portable water filtration and/or desalination systems for sharing across communities in times of extreme water scarcity. These interventions will be coupled with training and learning activities at the pilot sites to facilitate good maintenance and system sustainability, which is a crucial aspect of successful implementation and use of the climate adaptive water investments. Outcome 4 focuses on improving governance and knowledge management for CCA in the water sector at the local and national levels.
- The activities proposed for each of the outcomes are described below.



***Outcome 1: Water Sector – Climate Change Adaptation Response Plans formulated, integrated and mainstreamed in water sector-related and in broader policy and development frameworks***

***Baseline (Without LDCF):***

- The Solomon Islands Government recognizes the need for a sector-wide approach to water resources management through its commitment to integrated water resource management (IWRM) development utilizing learning from the GEF/UNDP/UNEP Pacific IWRM Programme executed by SOPAC-SPC. The Pacific IWRM Demonstration Project for the Solomon Islands focuses on water management approaches for Honiara city water and wastewater services<sup>5</sup>. Although the project is only focused on Honiara, the understanding of IWRM as an approach has increased across the national level institutions involved. The project has also supported the development of the National Integrated Water Resources Coordinating Committee, and in the development of the national strategy and action plan (currently draft). Critical to the project, greater understanding has developed from local projects – in this case the Kovi/Kongulai Catchment, and the water needs of Honiara, a growing city with an increasing need for water. Water Safety Planning, leakage detection, and other technical approaches, working jointly with the development of stronger community engagement in watershed management through the Kovi/Kongulai Catchment Group has improved the management of water for the city, and improved the protection of the catchment as a water source, and a source of income for the local communities.
- Yet, although vital at the project level, taking this experience, the learning, and the tools wider across the water sector and across the country remains a challenge. IWRM is also very much a new approach nationally, with only a small-scale demonstration approach in place but with success demonstrated through ongoing policy development. Mobilizing the policy, securing resources, and making strategic climate resilience investments in the water sector however, remains to be seen given failing statistics and sheer lack of data and information on water resources. In all government agencies, capacity is already limited to dispense basic functions and even worse, to address emerging issues such as climate change. Both supply and demand side management approaches do not yet integrate climate change impacts and IWRM approaches.
- Projects such as this highlight the ongoing need for assistance with integrating climate change into policies, strategies and programmes. Planned engineering and quality standards for water supply systems still need to be developed and climate-proofed, and there is a pressing need to establish a more accurate understanding of the rural water supply, sanitation and hygiene situation across the country. Water resources assessments are not carried out to guide the planning of water supply systems and it is therefore not known how robust approaches are to climate changes. For example, anecdotal evidence from the World Bank Rural Development Programme suggests that, although some community systems are maintained by villagers with some technical knowledge, the location of the source can often be inappropriate, introducing contaminants into drinking water, or equipment that suffers from repeated flood damage, requiring frequent repair, and the costly sourcing of replacement parts. These simplistic impact specific point solutions are temporary in nature, and often expensive due to replacement and maintenance costs. Furthermore, project related interventions which fail are often ‘picked-up’ and repaired by the Provincial Government, who may have had no involvement in the project and so keep investing in a project driven intervention that may be inappropriate and actually weakens resilience.

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<sup>5</sup> ‘Managing Honiara City Water Supply and Reducing Pollution via IWRM’. [www.pacific-iwrn.org](http://www.pacific-iwrn.org)

- At present, integrating adaptation into water resources and water supply and sanitation projects is absent. Newly mentioned in the draft rural WASH and National Water and Sanitation Sector Plan the recognition of climate change with evidence based learning, and projects designed to collect information and monitor the impacts are few in number. Where they do exist they have focused on collecting information at the national level to better understanding overall vulnerability. Yet it remains unclear how relevant these are for specific sectors or for water as a cross-cutting resource as information is not shared well, and the way climate change can impact different sectors not well understood or articulated. It is also not clear how action to adapt to climate change can be mobilized in such a decentralized country, but with the majority of capacity in the capital, Honiara, when the majority of social capital exists in community networks, and local institutions.
- Water shortages, droughts, polluted groundwater due to coastal surges and erosion, together with increased storm impacts and flooding all contribute as hazards to rural and township development (National IWRM Diagnostic Report, 2007). Some of the pilot sites are certainly limited in their opportunities due to lack of water and fragile water resource situations. There is an absence of understanding likely climate risks, and capacities to deal with them.
- Existing projects working on water such as those supported by development partners (i.e. SIACWSI) and the UNICEF implemented Improving WASH in the Solomon Islands project focus on delivering WASH services, but not on the risks to these services from climate change. The longevity of interventions therefore, despite historical failures in governance and a lack of support and capacity development activities around WASH interventions, is at risk from lack of clean water, lack of storage, water quality concerns, equity of use, and flood and storm damage – many lessons exist from the World Bank rural Development Programme that has experienced exactly these types of risks.

Adaptation Alternative:

- To move beyond national planning, SIWSAP will develop water sector adaptation response plans at the Provincial and Community levels (six Provinces and six communities). Within the timeline of the project these plans will guide investments at sites. The plans will be Province and community specific, but shared at the national level through the project lifetime, and will inform ongoing Ward Profiling, Constituency Development Planning, and Provincial Development Plans. The water sector adaptation response plans will not be designed in isolation from the Provincial and community planning process and normal procedures. They will be used as a tool to inform the planning process, and to guide the development of Provincial Water Adaptation Plans and the Community Water Adaptation Plans to both change practice for water resource and WASH interventions, and to attract investment into adaptation response at the Provincial and community levels.
- This component of the project will support existing planning processes that occur at the Provincial and community levels to guide interventions. Investment at sites with identified vulnerability to climate change, and learning from their adaptation needs will inform wider across the Community/Provincial to the National level. Currently there is no mechanism to identify site specific adaptation needs, or a way to learn from adaptation responses at the Community/Provincial to National level. Concurrently, the Project Management Unit will collate climate change information at the national level, and combined with better understanding at the Community and Provincials level develop a better idea of vulnerabilities, adaptation needs, and the capacity requirements nationally. This process and learning will be raised and shared at the National Climate Change Working Group level, but also at the National Water and Adaptation Forum, an event initiated by the project to raise awareness around climate change impacts, and adaptation response approaches. Key to this is

building adaptive capacity across institutions and leveraging the project learning into policy frameworks across sectors, using water as the entry point, in order to build greater understanding of vulnerabilities to climate change, and response approaches needed to guide future investments.

**Output 1.1.** *Vulnerability assessments of water supplies (in terms of quantity and quality) to climate change in targeted critical areas refined or formulated*

- Vulnerability assessment at the community level in the six pilot sites has been completed during the PPG phase. Based on these assessments, each of the six pilot provinces will go through a detailed local participatory vulnerability assessments to guide the identification of predicted climate change challenges to the Water Sector. Different tools are available for this process, and it is recommended that tools such as CRiSTAL, CEDRA, VCA (Red Cross) or others are used<sup>6</sup> and modified appropriately.
- The Provincial Vulnerability Assessment will be kicked off with an Inception Workshop in the six pilot provinces with PPC members and relevant stakeholders. During the Inception Workshop, the appropriate vulnerability assessment framework will be discussed and design, with inputs from the Community Water Committee members that have already conducted their vulnerability assessments in the PPG phase.
- Based on the framework developed through a participatory process, vulnerability assessment will be conducted through partnership by a team of external experts and key local stakeholders. The vulnerability assessment will highlight key current and future vulnerabilities of the water sector at the Provincial level due to impacts of climate change. The assessment will also inform suggested approaches that can reduce vulnerability and/or enhance water resource resilience, which will be key inputs to the provincial level Water Sector – Climate Change Adaptation Response Plans.

**Output 1.2.** *WS-CCAR plans prepared in the context of IWRM and in line with and integrated into existing local and national policy and development planning processes*

- Water Sector – Climate Change Adaptation Response Plans will not only demonstrate adaptation planning and response needs (actions-on-the-ground) at the pilot site level, but will also need to demonstrate how ‘additional’ activities in the water sector are required to future proof natural and built water storage and reserves for many different sectoral needs. This will have valuable lessons for the water agencies and wider sectors at the national level following the principles of IWRM. Through identifying the vulnerabilities of water supply systems at the pilot sites (both water quantity, and quality), the source of water, and the sink<sup>7</sup> (especially from sanitation), WS-CCAR Plans will be developed in the Provincial and community levels.
- In accordance with the national level IWRM commitments, these plans will also take into account uses of water beyond drinking and sanitation needs, and include food production, preparation, and cooking, and other domestic needs such as washing. For township sites the range of water needs and uses will be much wider and will need to include a broader range of sanitation options, water supply

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<sup>6</sup> Rather than specify the exact tools to use, options are presented here. The actual final tool used will be selected by the Project Management Office based on their experience of using different tools and appropriateness for the Solomon Islands, guided by experience from the relevant Government Agencies and the Climate Change Working Group. This is to ensure SIWSAP is building on existing capacity and knowledge, and not producing yet new external methodologies for the country to re-learn.

<sup>7</sup> Meaning the drainage area, - where does water used drain to – mangroves, ground near well, beach, etc.

options from strategic community and individual household water storage to standpipe development<sup>8</sup>, watershed management and source protection concerns, and water for food production needs.

- Both the provincial and community-level Water Sector – Climate Change Adaptation Response Plans will be developed through consultation and participation of key stakeholders. A participatory design workshops will be held with key stakeholders including government officials, technicians, farmers, fishermen, women’s groups and children where key findings from the vulnerability assessment will be shared, and based on that, needed and sustainable solutions will be identified to build long-term resilience to current and future climate change impacts to the water-sector. In some cases, it may be appropriate to take material and equipment suppliers to the pilot sites so they can better understand the technical needs and then identify the best options for the sites. Provincial Government Staff from Public Works, Environmental Health Divisions (PEHD), and other relevant agencies will also be involved in the development of the response plans to ensure they can be integrated, as easily as possible, into local planning processes. Current Ward mapping/profiling socio-economic assessments will help inform the development of the Adaptation Response Plans.
- The design workshops will not only serve as a forum to obtain inputs to the WS-CCAR Plans, but also as a forum for information sharing and awareness raising. Consultations during the PPG phase strongly indicate that maintenance and behavioural change is a key challenge to the effective adoption and sustainability of water-sector interventions from water storage to sanitation. Therefore, SIWSAP will engage not only the suppliers but also the users of the water systems will be engaged in designing the Response Plans, which will guide investments at the Provincial and community levels. All interventions proposed in the plan will include a maintenance strategy.
- Furthermore, the Response Plans will be informed by the national information available from other projects and programmes focusing on assessing vulnerability including the EU Solomon Islands Climate Change Assistance Programme supported through budget support. These plans will provide information for more informed decision making within the project – as a demonstration through working with Provincial Government of the changes in information requirements and decision-making required to reduce the potential risks of business-as-usual approaches.

**Output 1.3.** *Government budgets allocated to support implementation of key components of WS-CCAR plans*

*Cost Benefit Analysis of Proposed Water Sector Adaptation Options*

- In order to make informed and realistic decisions on which water sector adaptation options suggested by the Vulnerability Assessment and stakeholder consultations that the provinces and communities can commit to implement, a Cost-Benefit Analysis (CBA) will be conducted. A CBA will not only assist the provinces and communities to understand how much may need to be budgeted within their Water Sector Plans, development plans, and annual budgets, but will also provide useful information to understand which interventions may allow them to achieve maximum water resource resilience with the least cost. Linkages may be made to the Pacific Cost-Benefit Analysis (P-CBA) where tools, lessons, and expertise from other Pacific Island Countries can be derived for application to the context of the six pilot Provinces and communities of SIWSAP.
- Based on the vulnerability assessment, community consultation and CBA, the WS-CCAR Plans for the six pilot provinces and communities will be finalized, validated, and adopted. Local-level Water Sector-Climate change Adaptation Response manuals (both text and audio-visual forms if appropriate) that captures the processes, good practices, and lessons learned in the six pilot provinces and communities will be developed and disseminated at the national Water and Adaptation Forum as

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<sup>8</sup> Guided by the new Rural Water Supply and Sanitation policy to ensure appropriate and ‘policy aligned’ interventions.

part of Outcome 4. At this Forum, key principles identified through the provincial and community WS-CCAR planning process will be shared for integration within the national policy context.

### Replication

- Utilizing the experiences, know-how, and knowledge materials produced through the process of developing provincial and community-level Water Sector-Climate Change Adaptation Response Plans, this effort will be replicated to 6 more provinces and communities. Provincial and community leaders from the six pilot provinces and communities will be deployed as trainers and facilitators to guide the additional provinces and communities to undergo the necessary vulnerability assessment, community consultations, and CBA to develop the WS-CCAR Plans.

## ***Outcome 2. Increased reliability and improved quality of water supply in targeted areas***

### Baseline (Without LDCF):

- Rural water supply, sanitation, and hygiene are now recognized as a priority for the government. Improved WASH cuts disease, especially for children, reduces healthcare costs, decreases violence against women, and can increase school attendance, particularly for girls. Many rural communities across the country spend large amounts of time collecting freshwater, and with open defecation and other sources of pollution there is concern that unprotected freshwater sources are becoming increasingly polluted. However a lack of data for monitoring these issues is a clear problem to mobilize action in solving the WASH problems. With the population increasing at an average of over 2%, finding the resources and providing clean water services to a wide range of rural communities is a challenge.
- High failure rates of water supply systems, with around half failing or underperforming are due to many factors. Lack of ownership by communities, inadequate social involvement and capital building, poor or no training of communities in their roles and responsibilities, and in particular for operation and maintenance and financing is not improving the situation. The statistics for sanitation are worse, with an estimated 18% of the rural population of 404,072 people having access to a toilet. This is the lowest in the Pacific region, and one of the lowest rates globally. Poor technical designs, subsidies, discouragement, and lack of community involvement and awareness have limited the development of the sanitation sector, and interest in providing sanitation services.
- It is estimated that the government has the capacity to deal with around 6,000 rural people a year, according to UNICEF, but at a population growth rate of over 2% (in some cases over 4% for particular islands) addressing these issues requires development partner support. The complexity of climate change has not been considered in the water sector until now. Driven by the need for data and information collection, and focusing so far on food security and crop production, especially on outer islands, adaptation approaches have bypassed the water supply, sanitation and hygiene sector, including the wider impact on water resources, in particular groundwater. No consideration is made regarding diversity of water sources, or protection of surface and groundwater to climate change impacts, and stresses put upon the water resources as a consequence of people responding to other climate impacts, such as coastal erosion. The policy environment is currently going through a phase of addressing the lack of recognition of climate change for water resources, but it is some way off mobilizing this policy given the challenges in the sector already.
- The Solomon Islands Access to Clean Water & Sanitation Initiative (SIACWSI) is an ongoing initiative started in 2008 with development partners and the MHMS. AusAID is a lead donor to the Health Sector, providing around AUD \$20m a year, and has supported the development of the National Health Strategic Plan 2011-2015 which prioritizes rural WASH. Support for SIACWSI is provided through sector health support. SIACWSI is designed to mobilize rural WASH activities with other development partners, such as the EU improved governance and access to WASH for rural

people sector support to MHMS. SIACWSI aims to (i) increase coverage of WASH in rural areas, (ii) improve sector coordination, capacity and equity, (iii) establish sustainable and inclusive operation and maintenance models, and (iv) establish sustainable systems for improved hygiene awareness and to create demand for socially inclusive sanitation. Building Human Development: Improving WASH in the Solomon Islands is an initiative funded by the EU Water Initiative and implemented by UNICEF. It focuses on Choiseul, Isabel, Renbel, Makira, and Temotu Provinces – and in some towns in those provinces. This project will focus on improving water supply and sanitation facilities to communities and schools, and to help mobilise sector reform for improved WASH and to mobilise the new rural WASH policy. This project will be a key co-financing partner for SIWSAP, in particular for the delivery of this outcome.

- Improved governance and access to WASH for rural people – is a sector reform contract to the Solomon Islands government from the EU focusing on improving the living conditions of rural populations through implementation of the rural WASH policy and in scheme design and construction across the Provinces. MHMS-EHD – are already a key partner in SIWSAP as a co-implementer. The expected funding for this is in the region of €17m. The actual implementation of these funds is due to start in 2014, in line with this proposed project.

#### Adaptation Alternative:

- SIWSAP will mobilize action in the water and sanitation sector to include adaptation planning in rural WASH and water resource interventions funded by the Government and development partner funds. Both Outcomes 2 and 3 aims to implement the WS-CCAR in a way that is sustainable and replicable. In doing so, the focus of Outcome 2 is on enhancing existing capacities and awareness of climate resilient water management, such as rehabilitation and protection of existing water sources, as well as catalyzing institutional and behavioral changes to practice water conservation, especially in light of water-scarce situations. Pilot site communities need to become future advocates for the water and adaptation planning approach, protecting sources of water, and mobilizing adoption of water conservation practices within the selected sites and beyond. This component has substantial synergies with Outcome 1, and the strategic investment process. Sites will become demonstrations for people to learn from, and replicate using SIWSAP support. Uniquely, this approach combines water supply and sanitation approaches with wider water resources, including groundwater management. The multiple nature of water resources and their uses needs to be reflected in a move away from traditional sector approaches to what has become known as integrated water resources management, and lately has incorporated a greater understanding of ecosystems and the services they provide. At its most complex level IWRM involves cohesive decision-making concerning the development and management of water resources for various uses, with all decisions made and agreed upon by relevant stakeholders. This project will use and strengthen this approach through integrating adaptation into project implementation to improve the resilience of communities to climate change impacts and disasters. IWRM is already used in some cases as a valid framework for managing disaster risks and responding to disasters because it is cross-sectoral in nature, and involves multi-stakeholder participation at different levels<sup>9</sup>.

**Output 2.1.** *2.1.1 Community-level WS-CCA soft and concrete measures implemented to improve sanitation and water supply in times of scarcity, that may include, but not limited to: diversification of water sources; protection and restoration of ecosystems that protect critical water resources; improvements in water-use efficiency and overall demand-side management;*

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<sup>9</sup> Dalton, J., Murti, R., and A. Chandra. 2013. *Utilizing Integrated Water Resource Management Approaches to Support Disaster Risk Reduction*. In Renaud, F.G., Sudmeier-Rieux, K., and Estrella (Eds) *The Role of Ecosystems in Disaster Risk Reduction*. United Nations University, Tokyo.

*use of innovative instruments; building on traditional knowledge; protection of freshwater lens through better sanitation practices in small islands (e.g., composting toilets) (in about 6 sites)*

- Based on the desktop and field-level preparation work conducted during the PPG phase, SIWSAP project will utilize four main categories of interventions to enhance existing resilient water management capacities in the pilot sites. These approaches include: **1) enhancing strategic rainwater storage, 2) sourcing/rehabilitating sustainable water source, 3) developing groundwater management protocols, and 4) improving sanitation conditions.** Each of the Pilot sites is discussed below, with a summary outline of activities per site. These designs will be revisited at project start as outlined above to ensure they remain appropriate and to maximize the investment opportunity.
- **Pilot #1: Taro Township, Choiseul Province** - Taro township is an island with limited space. A large portion of this limited land is allocated to industrial use, where almost 40% of the island is used as runway for the airport. Its population is estimated at 1,423 where 760 (53%) are male and 663 (47%) are female and 408 (28%) are youth and children. Solutions to meet the water demand in a small island with a high population growth rate and density is therefore limited. The predicted impacts of climate change on the existing water resources as well as institutional assessments were conducted at the site during the PPG. Based on these assessments, SIWSAP will support the following interventions to enhance existing water resilience capacities in Taro Township:

#### *Enhancing strategic rainwater storage*

- Construction of additional rainwater storage, in households, community and government buildings as strategic storage during dry periods are required. Therefore, roof catchments of residential and public buildings, such as Sport Centre, government building, and churches, will be rehabilitated through the support of SIWSAP. This will require a detailed assessment of roof sizes, suitability, materials required such as guttering, etc., and the development of a clear management policy for the maintenance of community water reserves and their use. Estimated budget of this intervention is \$45,000 with the entire 300 people of Taro benefiting from the interventions.

#### *Sourcing/rehabilitating sustainable water source*

- As a strategic reserve, effort is required to locate an alternative water source. A spring located 8km away on the main island of Choiseul could provide an alternative safe water supply for Taro town. The spring was visited during the PPG phase and rapid discharge and quality tests were conducted. The flow was found to be 2lts/sec, but it is not known if this supply is constant. With increasing climate variability, the community has become, at times, vulnerable to severe water shortages. Under this component the following activities will be undertaken:
- Feasibility study for the use of the spring as an adaptation response for use as a strategic reserve – using the appropriate technical capacities to assess the flow rate, reliability of supply, water quality testing, and possible pollution sources affecting the water quality.
- An assessment will need to be made regarding the governance issues surrounding land tenure and ownership of the spring, the land it drains from, and flows over. If the spring is found to be a stable and clean resource, ideally the project should attempt to secure the resource as a strategic reserve, in negotiation with the Provincial Government and land owners and communities concerned.
- The project may also consider minor development of the source including some small-scale headworks to protect the source, and initial piping to a collector tank.
- Development of an operation and maintenance schedule, including financing and stakeholder/institutional responsibilities for the spring, should even minor development of the source (as described above) take place. This is important to ensure the source, if viable, does not become polluted or ‘forgotten’.

- If the source is developed, it is advisable for the Provincial Government to develop a protocol for the use of this water during periods of drought or other ‘emergencies’. This includes collection, of water, shipping and logistical issues concerning distributing the water around the town and communities, responsibilities, equity of distribution (not to just government workers). The project will help with this is requested.
- Furthermore, SIWSAP will support rehabilitation of hand-dug wells in Taro Township so that water quality can be improved. Currently, water inside the hand-dug wells are mostly brackish, therefore not suitable for drinking but suitable for washing and bathing. During the project, an earth sensitivity survey will be conducted to determine the water layer structure and water lens volume as well as inform appropriate and effective technologies for water pumps. Based on this analysis, rehabilitation of 15 wells will be implemented with estimated cost of \$55,000.

### *Developing Groundwater Management Protocols*

- 13 out of 15 wells (87%) contain water that is suitable for washing and bathing, but which is unsuitable for cooking with or drinking. Most of the wells have been hand dug and are lined with concrete. The following activities will be undertaken.
- A groundwater survey. Estimated cost of \$75,000. This would require equipment necessary for an earth resistivity survey to better understand the groundwater characteristics, and to take samples for water quality testing to determine if, under a certain collective management regime, groundwater could be considered a source of freshwater. The management regime would be based on a sustainable pumping rate for the groundwater to ensure sustainable yield of potable water. However, this also requires protection of the water resource as an underground water catchment. For this approach to work, maintaining the quality is also determined by preventing pollution into the groundwater from surface sources. In line with the Rural WASH policy, wells are a useful and if well managed correctly, sustainable secondary source of water.
- During the PPG phase it was apparent that a shallow wetland area in the middle of the island may also be a key groundwater recharge area. Despite this, the wetland area is used for the disposal of solid waste, containing plastic, food, metal and other waste. The project will look at options to clean up this site, remove the waste safely and dispose of it appropriately following the National Waste Management Policy. Options will be discussed with the communities and town to look at how this site can be better protected as a freshwater recharge area. Investigations will need to take place into the quality, and actual recharge value of this area, and if this is indeed important for the resilience of freshwater supply, the project will look at options to protect the site, and will implement them with the appropriate stakeholders.
- Leaving this potential freshwater source to degrade is a missed opportunity to help the island adapt to climate change. Degradation and pollution puts pressure on existing sources of freshwater. This requires additional investments to be made to source freshwater, when better management, recognition, knowledge and information can lead to the better management and utilization of existing resources as an adaptation response.

### *Improving sanitation conditions*

- As there is no way to empty the septic tanks in Taro safely, or anywhere to dispose of the waste, it is recommended that a change to sanitation approaches, including open defecation is mobilised through implementation of the new Rural Water Supply, Sanitation and Hygiene Policy. Therefore the project will take a four year strategic approach to sanitation marketing in Taro town.
- The aim of these sanitation interventions is behaviour change through community awareness, knowledge generation and self-empowerment. Using Taro as a key ‘demonstration’ site for sanitation change for the wider Choiseul Province is critical and the project would provide additional resources for promotion of sanitation across the Province in local languages. Sanitation Champions, identified



during the project will be supported by the project to lead and grow Provincial Campaigns for sanitation development under the national 'Our Sanitation Future' Campaign.

- **Pilot #2: Tigoa Township, Renbel Province** - Tigoa has the advantage of being relatively small in size, but still a Provincial Administration and an area of economic growth for the Government to focus on. The population of Tigoa is around 543 with adult males 95 or 17% and females 100 or 19%. The population of the entire province is estimated at around 3,000. It has a serious shortage of available climate data, information, and therefore knowledge over the years to understand changes in rainfall and temperature, and other factors to really assess the status of its water resources. Many options exist to secure more strategic water resources, and diversity of sources, but it is unknown how sustainable these sources are, what the quality of them is (on a consistent basis), and what the threats are to these sources from pollutants. Polluting the groundwater sources would significantly reduce the resilience of the town. Furthermore, it appears that good sources of water, such as a well near the Provincial Administration building has not been properly looked after and protected. An existing water supply scheme has been damaged and incorrectly established and rehabilitation of this scheme may be considered.

### *Strategic Rainwater Storage*

- Although not large in population, Tigoa is a township geographically spread out; essentially a collection of communities that are linked together through different roads and paths as communication routes. Water also binds them together, given their collective location close to groundwater wells in caves. Enhancing storage capacity especially at the community and household levels are crucial during dry periods. This includes women's resource centre building, provincial building, churches, rest houses, and residential buildings.
- To complement the groundwater which is subject to other risks, and partly because of the distributed community, a reticulated network would be challenging to implement because of ownership, operation and maintenance, and financing costs medium term and beyond, it is recommend that a *detailed rainwater harvesting survey* is conducted. This will need to assess the possible rainwater capture areas, and therefore the current tank capacities required relative to population needs. The project should then invest in rainwater tanks, roofing materials and guttering to improve individual household storage (because of the decentralised nature of the town). In consultation with the community and Provincial Administration, strategic storage options such as tanks and community reservoirs should also be considered a suitable option, particularly using large roof areas such as community buildings, Churches, etc. Training in maintenance of the rainwater harvesting technologies will also be required, including hygiene practices to preserve the quality of the water in tanks.

### *Groundwater Wells and Caves*

- The use of groundwater in shallow wells, or from caves is a historical practice, especially during drier periods. However, this water can sometimes be contaminated from birds and/or bats in caves. Furthermore, as a raised coral atoll, pollutants can rapidly move through the porous rocks due to the high hydraulic conductivity. Consequently, there is a need to protect these sources of water from surface pollution. It is recommended that a selection of sites are identified (Hutuna was visited during the PPG phase) as strategic Provincial reserves, and a process is initiated with landowners to discuss the options for protecting and preserving these unique habitats and natural water wells. Land ownership is however complicated in Renbell, focusing on patrilineal kinship and the transfer of land through the male side of the family.
- Consequently, a long term process of discussion needs to be initiated, led by the SIWSAP Provincial officer and supported by the PMU to enter into open and collaborative discussion with the landowners

to look at *sustainable long term protection options of the freshwater caves* – such as the establishment of a payment schemes for ecosystem services approach or water fund as a key element of ecosystem based approaches within an IWRM strategy – to focus on preservation of the source for the wellbeing of the wider community during dry and drought periods.

### *Source Protection, Rehabilitation, and Expansion Options*

- The *well at the Provincial Administration will be cleaned and rehabilitated* as a developed source of potable water. During the PPG mission it was found to contain hospital waste and was slightly acidic, although the acidity is normal in limestone and should not be a concern. This source should be rehabilitated if the water is of adequate quality, and large tank supply installed as a community reserve for dry periods, provided the well sustainable pumping rate and quality is acceptable.
- In discussions with the UNICEF<sup>10</sup> project working in Tigooa, and with the Provincial Administration, SIWSAP will consider a *feasibility study to assess the rehabilitation options* of the current gravity fed water system that has been damaged. Rehabilitation of this system should however, not be fully funded by the project, but with Government support. Any feasibility study should also take into consideration development of other sources (such as at Hutuna which was recommended by the community during the PPG).

### *Improving sanitation conditions*

- The project will build on the UNICEF project ‘Building Human Development: Improving WASH in the Solomon Islands’. This project will work in Tigooa and is looking *to develop some water supply provision, and to focus on sanitation and participatory hygiene development, sanitation marketing, water quality monitoring and capacity building*. In this particular case, SIWSAP interventions will expand on the UNICEF sanitation interventions through ensuring adequate consideration has been given to medium term water storage and water quality issues, particularly in relation to an increased sanitation options. The hydrogeology of Rennell makes sanitation a particular concern to maintain groundwater quality, and this process will be supported by the SIWSAP project to ensure that an increase in sanitation provision does not negatively impact current water resources. Further activities by SIWSAP will include:
- *Creation of a local hygiene campaign* to alert people to the risks around common WASH disease, etc – working with UNICEF, MHMS-EHD and the relevant Health Promotion Unit. Through consultation, and with UNICEF, selection of willing families to *trial new latrines, including composting or dry toilets*, funded by the project, as ‘demonstrations’ of households willing to ‘try’ latrines. This will include a series of monitoring activities with the families and communities involved where pros and cons of the latrines are openly discussed within the communities. The aim is to use these pioneering families and households (including government offices and small businesses) to be ‘live’ monitors for toilet use, who report back on a regular basis to the wider community and town on their perspectives regarding latrine use relative to open defecation on the beach/mangroves. This way, transparent perspectives are presented to the town and communities- and they can therefore make the choice about what they want to do for their ‘sanitation future’.
- **Pilot #3: Santa Catalina, Makira Province** – Santa Catalina is a small raised coral atoll approximately 3.2km long and 2km wide. It has an estimated population of 1,304 people where 293 or 22% are adult males and 321 females (25%). The children and youth are 690 or 53%. There are 253 houses of which 15 service houses such as a clinic, primary school, and churches. Residents of Santa Catalina suffer frequently from severe water shortages due to climate-induced droughts. It is

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<sup>10</sup> UNICEF implemented the EU Water Initiative ‘Building Human Development: Improving WASH in the Solomon Islands’.

also frequently affected by cyclones and earthquakes. It is considered to be highly vulnerable to cyclones, coastal and river flooding, tsunami risk due to its proximity to a fault line. There are no climate recording stations on the island, and nearby information was used to assess the site. The island has three villages on it which divide themselves into 8 zones for administrative purposes. The island has benefitted from a variety of different donor interventions over the years, with these still evident including rainwater harvesting tanks, a fuel power pumped reticulate system, and both naturally occurring and some shallow hand dug wells which are traditionally used for bathing and washing. Sanitation practices are open defecation on the beach. A few small septic systems exist, but there is no ability to empty them or safely dispose of the waste, and no running water. Utilising the proposed project strategy of developing the WS-CCAR Plans to identify the adaptation needs for site water management, the following proposed activities will be reviewed and improved during the inception phase of the project, and then implemented. Five main areas of intervention will be undertaken in this pilot project site.

### *Strategic Rainwater Storage*

- Rainwater harvesting - there are rainwater tanks in abundance, but no way to connect them to existing roofs. The roofs themselves need rehabilitating, with the provision of guttering and training in maintaining clean safe water. SIWSAP project will support rehabilitation of 10 water storage tanks connect to small roofs purposefully built in the 8 zones within the districts.
- Further rainwater harvesting tanks with their own roofs are also required for small household level supply – the current distribution is based on zones, and not on number of households. Consequently, some households only have storage for a few days, others of a few weeks. The distribution of storage needs to be made more equitable. In order to address this issue, SIWSAP will allocate 4 additional tanks for more equitable distribution of water. The estimated beneficiaries of this intervention is 500 people costed at \$ 70,000.

### *Sourcing/rehabilitating sustainable water source*

- Re-development of the natural water sources, including protecting the existing source and looking at other options to expand supply using a reticulated system of small bore pipe. However, this will not build reliance on pumping, in line with the new rural WASH policy, and also based on past experience of the communities with pumping and sourcing fuel. According to the rural WASH policy the main choice of systems should be gravity fed, and excessive costs such as fuel for pumps are not sustainable options.
- Restoration of shallow hand dug wells, which are used for bathing and washing, but during dry periods are used for drinking. Despite this the water quality is poor and saline, and is used by roaming village animals as well. These hand dug wells will be protected with correct simple technologies such as culvert and concrete slabs. They will be rehabilitated with hand pump systems to protect the water, and community rules established regarding their use to try and avoid them being used for drinking – contingent on provision of alternative sources of safe freshwater.

### *Developing Groundwater Management Protocols*

- A groundwater assessment will be conducted to assist with the identification of a new safe freshwater source. The hydrogeology of raised atolls often results in safe clean water stores underground, but also a high propensity for mixing of fresh and saline water in cases of excessive extraction. As the island is in a frequent earthquake zone, and experiences regular cyclones it poses challenges with choosing permanent or semi-permanent solutions. If a source is located that can be sustainably developed the project will invest in this to help build resilience into the communities supply options.

### *Improving sanitation conditions*

- Sanitation – is a challenge on Makira. The traditional practice of using the beach needs to be addressed in order to improve sanitation conditions, although it is also not clear if the use of the beach is affecting the water quality, when they rely on rainwater safely stored in tanks. To support and build adaptation into the UNICEF project ‘Building Human Development: Improving WASH in the Solomon Islands’ which will also support WASH interventions in Makira focusing on health clinics and schools. As with other sites, SIWSAP will provide additional support to try and improve sanitation provision and protect what freshwater resources do exist. The project will support UNICEF sanitation interventions through supporting the creation of a local hygiene campaign to alert people to the risks around common WASH disease, etc – working with UNICEF, MHMS-EHD and the relevant Health Promotion Unit from the main island. Through consultation, and with UNICEF, selection of willing families to trial new latrines, including composting toilets, funded by the project, as ‘demonstrations’ of households willing to ‘try’ latrines. This will include a series of monitoring activities with the families and communities involved where pros and cons of the latrines are openly discussed within the communities.
- **Pilot #4: Maanaoba, Malaita Province** – The PPG focused on the pilot site selected during the Inception workshop at Ferafula village within Maanaoba Island. The population of Ferafa’alu community in Maanaoba Island is 213 where adult females are 32 (15%) and males (13%) whilst youths is 153 (72%). The island has a similar geology to the previous site Santa Catalina, as a raised coral atoll. Consequently the adaptation challenges are similar in terms of adequate rainwater storage, very little surface water availability apart from some hand dug wells close to the coastline which are saline, and only used for batching and washing. The village of Ferafula also suffers from heavy coastal erosion due to storms and frequent cyclone damage during the season. Sanitation practices are open defecation on the beach. Two pour flush latrines do exist and one pit latrine. Utilising the proposed project strategy of developing the WS-CCAR Plans to identify the adaptation needs for site water management, the following proposed activities will be reviewed and improved during the inception phase of the project, and then implemented. Five main areas are to be considered under this pilot project. During full implementation of the project it is proposed that a WSCAAR Plan is developed not just for Ferafula, but also for the entire island of Maanaoba..  
Interventions at Ferafula would therefore be limited to:

### *Strategic Rainwater Storage*

- Rainwater harvesting restoration and development- there is sensible use of rainwater tanks in the village. The project will restore the sensible gravity fed rainwater harvesting system that needs restoring and technical upgrading to provide easier free flow abundance. Given the small population, rainwater tanks will be provided to all families including strategic community or shared storage tanks, with their own roof catchments. Correct sizing of roof equipment and other materials and distribution will take place under the development of the WSCCAR plans. The school roofing should also be assessed for capturing water and tanks fitted as freshwater storage for the school. The estimated cost of servicing and provision of tanks is \$ 90,000.

### *Sourcing/rehabilitating sustainable water source*

- Development of the natural spring (Faisafa), including assessing the yield and water quality of the spring/sink hole, and securing access with landowners to use the source for the village. The source would then need to be developed for use using small bore pipe, with the aim of gravity supply. According to the rural WASH policy the main choice of systems should be gravity fed, and excessive costs such as fuel for pumps are not sustainable options.

- *Restoration of shallow hand dug wells* are used for bathing and washing. Despite this the water quality is poor and saline, and is used by roaming village animals as well. These hand dug wells will be protected with correct simple technologies such as culvert and concrete slabs. They will be rehabilitated with hand pump systems to protect the water, and community rules established regarding their use to try and avoid them being used for drinking.
- 3. Developing Groundwater Management Protocols
- *A groundwater assessment* is required for the entire island of Maanaoba using the correct technical interventions to assist with the identification of new safe freshwater sources. The size of the island, and the WSCAAR planning process will be useful to better understand how climate change is affecting the entire island system. From this a better understanding of the need to protect the watershed and natural wells/sink holes are key water resources for the island can be better understood. A hydrogeological survey would be required for the entire island, but if the sink holes are a valid resource, some form of protection zone and fund would need to be established

### *Improving sanitation conditions*

- *Sanitation* – The traditional practice of using the beach will be addressed. As with other sites, SIWSAP will provide additional support to try and improve sanitation provision and protect what freshwater resources do exist. The project will support sanitation interventions through supporting the creation of a local hygiene campaign to alert people to the risks around common WASH disease, etc. – working with UNICEF, MHMS-EHD and the relevant Health Promotion Unit from the main island. Through consultation, and with selection of willing families to trial new latrines, including dry composting toilets funded by the project, as ‘demonstrations’ of households willing to ‘try’ latrines. This will include a series of monitoring activities with the families and communities involved where pros and cons of the latrines are openly discussed within the communities.
- Given the small scale of Ferafula Village within the Manamba Island, it is also recommended that the sanitation campaign is targeted at the entire island of 3,000 people, using interventions at Ferafula and other sites to mobilise behaviour change.
- **Pilot #5: Tuwo, Temotu Province** – The entire Province of Temotu only has 5.600 people, and the Tuwo community is estimate to have a population of 1,016 people of which 162 (16%) are adult males and 172 (17%) are adult females. Youth’s population is 682 or 67% of the total population. It is an atoll island, and therefore has limited options in water collection and storage, and faces other vulnerabilities from sea level rise, storms, and cyclones. Most of the water resources are rainwater collected in tanks, with some shallow freshwater available but overuse of this renders the wells saline, and therefore unfit for drinking water, but suitable for washing and bathing. Sanitation consists of 7 pour flush latrines, or the beach for the majority of the population Interventions at this pilot site will consist of:

### *Strategic Rainwater Storage*

- *Rainwater harvesting restoration and development*- there is sensible use of rainwater tanks are widely used in the village, and previous support has been offered by the rural Development Programme. However, there is community tension over the allocation of tanks, which suggests they were not distributed equitably. SIWSAP will assess this situation and based on the WSCAAR plans, invest in tanks to ensure equitable distribution and access to water resources. Furthermore, the project will invest in strategic shared storage for the entire community, using tanks with their own roofs. The reason for this is that some of the communities use traditional housing with sago leaves, which are not effective at collecting rainwater. Correct sizing of roof equipment and other materials and distribution will take place under the development of the WSCCAR plans. The school roofing will

also be assessed for capturing water and tanks fitted as freshwater storage for the school. The estimated cost of rainwater harvesting restoration and development in Tuwo is \$83,000.

#### *Sourcing/rehabilitating sustainable water source*

- Restoration of shallow hand dug wells are used for bathing and washing. Despite this the water quality is poor and saline, and is used by roaming village animals as well. These hand dug wells need protecting with correct simple technologies such as culvert and concrete slabs. They will be rehabilitated with hand pump systems to protect the water, and community rules established regarding their use to try and avoid them being used for drinking.

#### *Developing of Groundwater Management Protocols*

- A groundwater assessment is required for the entire island of Temotu using the correct technical interventions to assist with the identification of a new safe freshwater source – or at least to see if one can be developed with a sustainable pumping rate. The size of the island, and the WSCAAR planning process will be useful to better understand how climate change is affecting the entire island system. From this a better understanding of the need to protect the watershed and natural wells/sink holes are key water resources for the island can be better understood and shared across the province, informing the development of the overall Provincial Plan on water and adaptation.

#### *Improving sanitation conditions*

- Sanitation – As with other sites, SIWSAP will provide additional support to improve sanitation provision and protect what freshwater resources do exist. The project will support sanitation interventions through supporting the creation of a local hygiene campaign to alert people to the risks around common WASH disease, etc – working with UNICEF, MHMS-EHD and the relevant Health Promotion Unit from the main island. Through consultation, and with selection of willing families to trial new latrines, funded by the project, as ‘demonstrations’ of households willing to ‘try’ latrines. This will include a series of monitoring activities with the families and communities involved where pros and cons of the latrines are openly discussed within the communities.
- **Pilot #6: Gizo Township, Western Province** – Gizo is the capital of the Western Province. It is a relatively small when compared to the surrounding islands; the island is 11 km long and 5 km wide, with a summit elevation of 180m (Maringe Hill). With a population of approximately 7,177 (2009 census), it is the second largest town in the country with an urban population of 3,547 [2009 census]. The number of males is approximately 3,802 (53%) and females are estimated at 3,375 (47%).
- Gizo Water Supply system is one of the old systems that was established during the colonial government. There had been several studies commissioned to assess various sources and option including ground water. Gizo Island also has several streams and springs. Leoko Stream situated on the western part of the island was also studied and was included with an automatic water level monitoring recorder. The mean flow was measured to be 6 litres per second, although there is no weather monitoring station in Gizo, but there is a monitoring station in Munda on New Georgia Island with annual rainfall of 4230 mm in 2012.
- In terms of vulnerability, the watersheds of Gizo Island are highly vulnerable to extreme drought periods. The island is well known for running short of water. Gizo water supply is problematic and had been affected by the climatic variation and conditions. Residents have had to resort to using hand dug wells at times. However, almost all houses with roofing iron collect water from rainfall using tanks. Rainwater harvesting is a common practice in Gizo Township because the actual water supply system does not work very well as it runs dry during dry periods, and illegal off takes and other

challenges, such as rural urban challenges over water, and vandalism, have left a good water system not fully functioning. SIWSAP activities at Gizo will include:

### *Strategic Rainwater Storage*

- A rainwater harvesting survey of the entire town is required. Some tanks will not contain clean water, and there is a need for some additional storage. Communal back-up storage will be developed in communal buildings, and extended in areas with large roofs, such as churches. In many places guttering is required, and training in maintaining tanks for clean water provision. An estimated budget of \$50,000 will be utilized to rehabilitate existing rainwater tanks and roofing systems.

### *Sourcing/rehabilitating sustainable water source*

- Survey of water supply system - Utilising the proposed project strategy of developing the WS-CCAR Plans to identify the adaptation needs for the town. This will incorporate a survey of the water supply system. As a core growth area of the country, and an annual population growth rate nearing 4%, Gizo town is a key showcase pilot location for the SIWSAP project to demonstrate the adaptation response approach.
- Protection of existing source and development of a new additional water source at Leoko and Tirokogu - a payment for ecosystem services scheme, or similar mechanism needs to be developed to protect the existing watershed above the sources located in the forested valleys of Gizo Island. A new source, close to the existing one also needs to be surveyed and assessed as a suitable source of water. A feasibility study will be prepared with the Provincial governments support to develop the other source at Tirokogu.
- Repairs and monitoring: of the existing system. Vandalised pipes will be replaced to expand capacity to the existing network system, and the old reservoir will be rehabilitated, including the development of a protection zone around the reservoir to improve the resilience of the system through providing additional storage and capacity. Sand filters and other water quality equipment will need to be replaced.
- To match the possible development of a new source, the project will look to partner with Solomon Water (formerly SIWA) in developing sustainable water sources for Gizo. The cost of sourcing and/or rehabilitating sustainable water sources in Gizo is estimated at \$ 90,000.

### *Developing Groundwater Management Protocols*

- Protocols in which water can be managed and accessed more equitably, particularly during water shortage situations will be discussed and designed through community consultation processes. The consultations will take place with the Gilbertese villages that currently experiencing governance issues related to water access. Equitable access of water is particularly important in ensuring that marginal groups of the community such as women, children, and the elderly may access water even during periods of water scarcity. Therefore, a detailed survey of who uses what water, and can they be connected properly before the water pipes enter the town (and become a municipal responsibility) will be conducted to strengthen water resilience through improved governance..

### *Improving sanitation conditions*

- In line with other pilot sites, SIWSAP will build upon the WASH awareness campaign implemented by UNICEF and MHMS-EHD to mobilize a Province wide sanitation and hygiene 'campaign' based in Gizo for all the Western Province. Through working with UNICEF, MHMS-EHD and the relevant Health Promotion Unit the project will alert people to the risks around common WASH disease.

***Output 2.2. Community-based Climate Early Warning and Disaster Preparedness Information System tailored for water resources management developed and implemented in targeted areas***

- An Early Warning System (EWS) represents the set of capacities needed to generate and disseminate timely and meaningful warning information that enables at-risk individuals, communities and organizations to prepare and act appropriately; most importantly in sufficient time to reduce harm or loss<sup>11</sup>. Early, to signify ‘prior’ to the arrival of a ‘hazard or threat’ — while there is still time to respond and therefore reduce potential harm or loss, or prevent a disaster. In this case, a warning is the message (using signs, words, sounds or images) that announces an imminent danger. This ‘trigger’ initiates an ordered and often standardized compilation of elements – at its most complex, an end-to-end warning system is designed to connect those who need to hear messages, to others who compile and track hazard information and compile warning messages or other triggers.
- Water Resource assessments conducted in the pilot sites during the PPG phase (Annex X) indicate that the major “hazard” to water resilience in the SIWSAP project sites is the lack of rain for a prolonged period (normally for more than two months). As most community-level water resources depend on rainwater, an early warning system that informs communities of projected dry spells (lack of rain) so that they can prepare well in advance through water conservation efforts has been identified as an effective approach to deal with existing water resource constraints, which would pose even further limitations to communities in the future due to climate change. An institutional analysis water sector resilience conducted in the PPG phase indicates that while some communities may already have community level water management rules that are enacted during periods of water scarcity. Building on existing local systems and knowledge, the SIWSAP project intends to develop both an effective community-based climate early warning and disaster preparedness information system for water resource management that is both “top-down” and “bottom-up”.
- *Participatory Water Resource EWS Design* process will be undertaken to develop both “top-down” and “bottom-up” EWS in the 6 pilot sites engaging all relevant stakeholders who will be receiving and sending information related to water resource scarcity. The “top-down” EWS will focus on transmitting information related to dry spells and prolong period without lack of rainfall from the National Meteorological Service to the Provinces (i.e. Provincial Secretary), sub-provincial authorities (i.e. Provincial Ward Members), communities, and eventually to households and individuals. Water resource assessment conducted during the PPG phase found that provinces and communities regard period of more than 2 months without rain as a “disaster/drought” as communities try to develop water sources and storage facilities with capacities to supply water to their communities for 2 months (Annex X). Based on the final assessment of water resource vulnerabilities and capacities, sufficient lead time that is required for the National Meteorological Service to release climate projection information related to rainfall and/or water scarcity will be discussed in the design phase.
- Similarly a “bottom-up” EWS will be designed through a participatory approach. While rainfall information from National Meteorological Service would provide a scientific bases to trigger the water resource EWS, not all drought can be predicted accurately and timely. Furthermore, with climate change, extreme events will most likely be more frequent and less predictable. Therefore, in order to enhance water resource resilience, in addition to the “top-down” EWS based on scientific information, an alternative “bottom-up” water resource EWS would also be effective, which will be based on community-level monitoring of water storage levels. Once water storage levels goes below a certain threshold, this too may trigger a water resource EWS that would enact certain water management rules agreed upon by the community groups and/or group of households sharing the water resources.

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<sup>11</sup> UNISDR, 2009.



- After participatory community designs of both the “top-down” and “bottom-up” water resource EWS are conducted in the 6 pilot sites, *detail designs* will be developed that would inform the specific technologies and sites required for the EWS hardware software. Based on the detail design, the *EWS systems will be procured, installed and tested*. Simultaneously *trainings* of those responsible to manage the EWS at the national, provincial, and community levels will be conducted. This will also be coupled with a broader training of EWS users (i.e. community members) who are required to respond appropriately after receiving the water resource early warning messages. Therefore, training at the pilot sites will engage various stakeholders including appropriate disaster (extreme water shortage) management officers and other agencies including the Solomon Islands Red Cross and importantly Church networks<sup>12</sup>, PEHD officers, and MHMS. Community-level water resource conservation techniques such as the community water management rules will be introduced and established through these trainings.
- *Communicating and Replication* – Water management EWS systems will be mobilized at replication sites by the Provincial Officers. Tools to facilitate replication may include a radio programme that explains the development process of the Water management EWS. The programme will focus on water risks and hazards, both hazards such as floods and storms, but also slower onset problems such as drought and pollution of water sources. This programme will be shared nationwide over the course of the project. A critical element of disaster risk planning is communication, between formal and increasingly informal ‘agencies’ involved – relying solely on national response mechanism is costly and a lengthy process, and cripples government temporarily as all resources are re-allocated to response mechanisms. This has an immediate impact on GDP and other sectors. The National Development Strategy highlights the need for better ‘models of good practice for disaster preparedness and response...and the need to improve communications and coordination with outer island communities’<sup>13</sup>. Communicating how communities identified the hazards, and then what they did to mitigate against them and better prepare will be the core focus of the radio programme
- Processes, data, and information collected over the course of developing the EWS and mobilizing it at the pilot sites will be captured and documented by the PMU (including through the use of video). This information will be shared with the Red Cross and NDMO for disaster risk reduction and preparedness learning purposes, but also with RWSS and MMEME-WRD to better understand community hazards and their response approaches. This information will be used to guide more appropriate interventions in villages and towns in the future, including the impacts on surface and groundwater resources.

### ***Outcome 3. Investments in cost-effective and adaptive water management interventions and technology transfer***

#### ***Baseline (Without LDCF):***

- Water, Sanitation, and Hygiene (WASH) statistics for the overall Solomon Islands indicate there is a wide and relatively good coverage of water supply (although this could be improved), but sanitation remains very low when compared regionally and internationally. Progress towards reaching the Millennium Development Goals (MDGs) overall shows good progress for primary education and maternal and child mortality. However, coverage for rural water supply and sanitation remains low. Previous tensions, weather conditions, and an expanding population have put pressure of the water supply and sanitation services across the country. 71% of the

<sup>12</sup> Identified as an invaluable network, often overlooked and not adequately integrated into risk reduction planning and response. See Gero, A, Fletcher, S, Rumsey, M, Thiessen, J, Kuruppu, N, Buchan, J, Daly, J, Willetts, J (2013) *Disaster response and climate change in the Pacific*, National Climate Change Adaptation Research Facility, Gold Coast, pp. 202.

<sup>13</sup> National Development Strategy, Objective 7: Effectively Respond to Climate Change and Manage the Environment and Risks of Natural Disasters.

households across the country do not have improved sanitation facilities, and around 30% do not have improved access to safe drinking water. For rural areas these numbers are lower with over 80% having no access to improved sanitation facilities, and almost 40% of people do not have improved access to safe drinking water. For a country where 80% of the population are classed as rural these are sobering statistics.

- Equally, the Rural Water Supply and Sanitation Policy (draft, July 2013) vision states that: ‘All Solomon Islanders with easy access to sufficient quantity and quality of water, appropriate sanitation, and living in a safe and hygienic environment’, and recognizes that the conservation and protection of water resources is of great importance to the Solomon Islands. This is due to increasing population pressures, logging and other activities that threaten water catchment areas, with knock-on detrimental effects on livelihoods and health. The policy also recognizes the ongoing Integrated Water Resource Management approach, requiring collaboration and coordination with all sectors including the rural water supply, sanitation and hygiene agencies.
- Furthermore, the policy specifically recognizes climate change impacts, and the need for close institutional collaboration, to adopt a flexible approach to technical design and construction standards, to make wider use of the opportunity to work with and engage community capacities to better understand and leverage local climate change knowledge and disaster events and impacts, and to ‘build-in’ greater understanding of climate change in providing rural WASH services. However, without support for this process, and the development of greater adaptive capacity, there is a risk that many of the water interventions will continue along the business-as-usual model. This is critically important, given there are already suggestions that the Government has not paid enough attention to water supply and sanitation requirements, and the integration with wider water resource management historically. These findings are documented in the AusAID Rural WASH Transition Plan, which focuses on the need to adjust the way water is managed in country and the need to improve governance of the resource, and sanitation. The Plan provides key baseline information regarding the need for improved leadership, planning, monitoring of interventions, and the urgent need for advocacy and sanitation and hygiene campaigns across the country. The lack of capacity for community engagement is a major hindrance to development progress. The plan also highlights climate threats to interventions, but does not provide a further analysis.

#### Adaptation Alternative:

- Building on the efforts under Outcome 2 to enhance existing water facilities and management capacities to implement provincial and community-level WS-CCAR plans developed under Outcome 1, Outcome 3 will focus on building additional facilities’ capacities and awareness to further strengthen climate resilience in six pilot sites. This will be done through four types of interventions, including **1) provision of additional rainwater storage, 2) developing new surface water sources such as from river systems, 3) development of new water sources, such as from wells, and 4) preparing for extreme water scarcity events through provision of specialized equipment such as desalination and water treatment systems.** Project’s targeted investments will mobilise changes in the way water is managed nationally. Through investing in sites driven by community design, implementation, and maintenance and supporting MHMS-RWSS in their interventions, the project will change the approach taken to develop water resources. The NAPA has identified that better information is needed to help understand the risks to different sectors – for water this is critical as both a lifeline resource, but also for other sectors. The lack of data and information hinders the ability to adequately cost, resource and plan responses. SIWSAP aims to adjust that through providing climate information, and using this to influence water and other sectoral investments.
- Interventions designed and implemented through the pilots will be integrated into partner projects to improve the sustainability of interventions. Many water projects, as discovered

during the PPG, do not take into account adaptation, and suffer from poor sustainability and operation and maintenance. SIWSAP interventions aim to change that, and through national and Provincial communications share information on effective adaptation responses to feed into sectoral reform and budget development.

- Within the Solomon Islands moves are currently underway to provide for a National Water and Sanitation Sector Plan, driven forward by the Cabinet approved National Inter-sectoral Water Coordination Committee (June, 2013). This process has been supported by the GEF funded Regional Pacific IWRM Project, initially co-financed by the EU Water Initiative IWRM National Planning Programme. The proposed project interventions will feed valuable lessons into the application of this plan, which does primarily take note of climate change impacts due to the influence of SIWSAP during the PPG phase.
- SIWSAP will provide pilot site lessons to inform the policy revision process and the implementation of the National Water and Sanitation Sector plan. Uniquely, compared to other projects focused on WATSAN targets, and impact-specific interventions, this project will provide for lesson learning on the ground, the development of unique support and interventions to existing projects for adaptation needs, working with co-financing support from the EU, AusAID, and UNICEF, and the collection of further knowledge and information, including investment in data collection and capacity development.

**Output 3.1.** *Strategic investments in water infrastructure in target areas, including but not limited to: new household and communal water storage systems and infrastructure provision of up to 4 portable water filtration and/or desalination systems for sharing across communities in times of extreme water scarcity.*

- Outcome 3 will further engage community stakeholders to design and implement a total of 20 new sustainable and effective climate-resilient water management approaches that build additional water facilities and management capacities across the 6 pilot sites. Similar to interventions under Outcome 2, Outcome 3 will deliver on provincial and community-level priorities highlighted within the WS CCAR Plans through active demonstration of measures and approaches in the Plans.
- Based on data collected and assessments conducted during the PPG phase, the SIWSAP will implement interventions categorized in the following four broad categories including: *1) increasing rainwater storage, 2) cultivating new river water sources, 3) development of new water sources including small-scale reservoirs and wells, and 4) preparing for extreme water scarcity events.*
- Below Table illustrates the proposed interventions to be supported through SIWSAP in each of the pilot sites that have been identified as measures to build additional water management capacities.

Table: Proposed Outcome 3 Interventions in Pilot Sites

Province	Community	Intervention Type	Proposed Intervention	Estimated Cost US\$	Estimated Beneficiaries
Choisuel	Taro	1) Rain	Construct a Rainwater storage using roof catchment	70,000	1423
		2) River	Feasibility Study of Water supply from Mainland River	55,000	
		4) Disaster preparedness	Purchase of portable water system	160,000	

Province	Community	Intervention Type	Proposed Intervention	Estimated Cost US\$	Estimated Beneficiaries
Renbel	Tingoa	3 Well	Development of Natural Wells	90,000	543
		4) Disaster preparedness	Purchase of portable water system	160,000	
Makira Ulawa	Santa Catalina	3 Well	Development of the identified natural well	50,000	1304
		1) Rain	Provision of additional storage tanks with roof catchment	55,000	
		4) Disaster preparedness	Purchase of portable water system	160,000	
Malaita	Manaoba	3) Well	Development of Natural Wells	120,000	213
		4) Disaster preparedness	Purchase of portable water system	160,000	
Temotu	Tuwo	3) Well	Redevelopment and development of Wells	80,000	1016
		1) Rain	Additional Storage Tanks and Shed for Roof Catchment	90,000	
		4) Disaster preparedness	Installation of portable water system	160,000	
Western	Gizo	2) River	Construction of Storage Tanks at Government Building	60,000	3802
		2) River	Development of Tirokogu stream	80,000	
		2) River	Feasibility study of reticulation system	60,000	
		2) River	Construction of water reticulation system	400,000	
		4) Disaster preparedness	Installation of portable water system	160,000	
<b>TOTAL</b>				<b>2,170,000</b>	

- Procurement of Relief and Communications Equipment.** There is a lack of available water security equipment at the Provincial level. The Solomon Islands Red Cross have highlighted the need for further portable water filtration units, the need for additional strategic freshwater storage options at certain locations during disaster relief periods, and improved communications on Provincial situations and needs during disasters. The project will therefore establish a procurement plan with the NDMO for the following equipment, locally available in the Pacific region, scoped out during the PPG phase, such as Trunz Water System 300 and Trunz Brackish System 300. Although these systems are to be placed in the pilot sites, as they are mobile systems, they will also benefit surrounding communities and people during times of water scarcity and disasters as they can be deployed to nearby locations depending on the needs on the ground.

***Output 3.2. Compilation of best practices on applicable technologies for dissemination and replication by project partners with support from the project***

- The PMU will recruit a local team during the project to specifically deliver knowledge management activities. These activities will include digesting and documenting technical reports and other project related information, including the collected climate change and

adaptation relevant information, and ‘translating’ this into national and provincial relevant outputs – tailored communications products. Service providers could be local NGO’s, or for example, journalists and independent communications experts. These will be communication experts and not technical specialists, who often find it difficult to communicate technical issues into common language and therefore communication products designed to influence behavior change. This activity is concerned with taking technical outputs and nationalizing them for a wider range of stakeholders, and to influence wider society. This will include developing news stories for national broadcasting on television. These tasks are often left until the end of projects, and are often time consuming (and therefore not cost-effective) for technical staff to implement.

- With the support of AusAID co-financing under sector reform support to the rural WASH sector (SIACWSI), the project will also mobilize the use of volunteers under the Australia Volunteers International (AVI) or Pacific Technical Assistance Mission (PACTAM) to bring in additional capacity to the PMU. AusAID already provide support of a similar nature to MHMS-RWSS. Additional support, for a defined timeline (2 years), specifically on climate change adaptation and response measures will be needed to support the PMU in analyzing lessons from the pilot and replication sites. These lessons need to be absorbed, and best practices identified, both at the sites that SIWSAP has direct control over with partners and communities, and at the sites where the project will invest in adaptation responses in addition to other ongoing rural WASH projects (supported by the EU, AusAID, and UNICEF).
- The skills needed include the ability to technically understand the adaptation elements – the technical challenges, and the difficulties, for example, of sourcing additional surface water over long distances, and to provide recommendations to the use and management of water in this respect. This will take into account rural water supply, sanitation and hygiene interventions but also those associated with irrigation needs, the use of water for farm plots and gardens at the pilot sites. Further outputs will include a better understanding of the implications of the changing climate on surface water flows for irrigation and hydropower generation needs, to support MMERE with their energy mandate, including the opportunity additional flows could present for sustainable hydropower development, particularly at the Provincial level where small hydropower sites could reduce the costs and reliance of fossil fuels.
- Best Practices will be developed as a series of guidance documents, supported with training videos in English and Pidgin for sharing across Provinces and national agencies. Videos which focus on practical level issues such as looking at alternative water storage options, or developing a community based early warning approach will use pilot and replication sites in the videos – using the Pilot Project Committees to showcase project examples and communities identifying and solving local problems themselves.
- SIWSAP will help develop information and experience for sharing at the regional and international level through platforms such as the Adaptation Learning Mechanism, and IW:LEARN. Equally, material such as training courses, training videos, project briefings and experience notes, case studies, science related information of publication standard, will be showcased within the region with the **Pacific IWRM** programme, and the regional **Pacific Adaptation to Climate Change** (PACC) programme. Guidelines on climate proofing water supply and sanitation interventions will be valid for other globally projects such as **the African-Indian Ocean IWRM SIDS** project (<http://www.aio-iwrn.org/>), and the **Integrated Coastal Area and Watershed Management Project (IWCAM)** and its follow on project IW-ECO (<http://iwcam.org/>).
- Best practices from the project will also be shared at the World Water Forum in South Korea (2015), with high Pacific relevance, and at the Forum in 2018 (venue tbc). In particular, outcomes from the National Water and Adaptation Forum, and the Sanitation Futures camping

will be documented and shared with partners to influence future project and programme design. MDPAC will be specifically involved in this process as a member of the Project Board.

***Outcome: 4. Improved governance and knowledge management for CCA in the water sector at the local and national levels***

***Baseline (Without LDCF):***

- There is a lack of understanding, awareness and information regarding the likely impacts of climate change on different sectors, and where there is information it is not well understood how this will manifest. The quality and supply of water resources in the Solomon Islands is increasingly becoming threatened by development activities such as logging, agriculture and land clearance for subsistence agriculture (which may require irrigation at certain times of the year). Some Provinces find clean surface water, but others suffer from saline intrusion, land use practices that pollute freshwater, inappropriate siting of tanks and sanitation, and lack of operation and maintenance on freshwater systems, such as rainwater tanks but also more technical solutions. Certainly, Makira, Malaita, and Temotu provinces, as discovered during the PPG phase real and concerning water challenges, often running out of water and having to live off coconuts. Yet assessments of water resources and availability are mainly lacking, and have been driven by other economic needs, such as the development of hydropower, or flood warning.
- Advocacy material on climate change and the impacts on the Solomon Islands is limited at the national level. There is very little sharing of existing information and knowledge beyond those directly involved in collecting information as either development projects or development partner supported interventions through Government agencies. At the Provincial level, anecdotal information exists, but codification and capturing of this knowledge is infrequent. During the PPG Phase it became clear that one of the proposed pilot sites was already experiencing the impacts of climate change through sea level rise and shoreline erosion, compounded by poor land use approaches due to a lack of information and capacity to build resilience. (This site will no longer be included in the project as 90% of the population has relocated.) There is a high possibility
- The stakeholder analysis also indicates the sporadic nature of climate change interventions, through development partner projects, NGO activities, disaster response approaches and government activities. An attempt to coordinate climate change interventions at the Provincial level is the Choiseul (Province) Integrated Climate Change Programme (CHICHAP). This Programme aims to encourage development partners and national agencies to coordinate and collaborate programmatically across Choiseul the Province to improve efficiency and effectiveness. The programme will focus on food security, although some water interventions are proposed.
- The new Rural Water Supply and Sanitation Policy (draft, July 2013)<sup>14</sup> defines the development, coordination, management, monitoring, evaluation and implementation of sustainable rural water supply, sanitation and hygiene development activities in the Solomon Islands. This policy changes the institutional architecture designed to respond to water supply and sanitation challenges. It defines new criteria for project interventions, and defines the focus on basic, low-tech solutions – appropriately designed to the local situation and capacities. Where necessary, higher technical interventions should only be provided where the recipients are made aware of, and are able to cover the financial costs of operating and maintaining more complex solutions, noting that this also requires improved technical capacities. The policy provides guidance on appropriate rural water supply approaches, and also for sanitation. This guidance will be used to

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<sup>14</sup> The Solomon Islands Rural Water supply, Sanitation, and Hygiene (Rural WASH) Policy, July 2013. DRAFT, v.11.

define some of the activities that SIWSAP will invest in, yet it remains to be seen how the rapid change to the sector will manifest in delivering existing services, let alone take into account climate change complexities, and learn from interventions at the same time. The AusAID Transition Plan raises these issues as key risks to future water sector delivery during the period where institutional change is required, at the same as maintaining delivery of existing, and rapid expansion of water sector interventions.

### Adaptation Alternative:

- New rapid policy developed in the water and sanitation sector is welcome. However, although note is made of climate change it is still a difficult concept to channel into programmes and institutions that have clear mandates on water supply provision for example. The ability to see around the bend - to better understand the possible impacts of climate change is important for future planning and economic growth. The project will develop guidelines, and scientific outputs to help provide government and partners with the evidence base to inform changing practices, including better recognition of climate change impacts at the policy level. Expanding and improving the climate monitoring network and investing in a national diploma in water and adaptation at the national university will build local skills and understanding of climate change.
- Interventions are expected to significantly improve the water provision situation, and develop and protect strategic water reserves, and will also initiate a process for community identification of disaster risk and costed response plans. A sanitation and adaptation partnership with Tuvalu, a regional leader in eco-sanitation will catalyze action desperately needed in reversing the sanitation trend of increasing numbers of unserved rural people. Tuvalu also lives with sea level rise, salinized shallow groundwater, and the threat of 'king tides'. Large amounts of donor support to Tuvalu over the years, and their recent drought experiences will bring much needed perspectives and knowledge to the Solomon Islands under a collaborative partnership.
- Mobilising innovative communication approaches, building on national cultural beliefs and networks will help to push the climate change impacts and water resource protection and management message wider than conventional approaches. The use of theatre, radio, television, participatory video and video diaries (focusing on women), rural training centres will provide a catalogue of communication products, tailored for different groups, designed to gather information and share experience on adaptation - mobilizing discussions from the national institutional level to the Provinces and communities, and vice-versa.
- The project will contribute and learn from national interventions, and those at the Provincial level such as the CHICHAP programme, to gather lessons on governance for climate change adaptation across sectors, and from this look at improving the IWRM approach and mainstreaming of IWRM policy principles across sectors, using project learning to influence sectoral policy development and programme implementation. IWRM is a multi-sector approach, and therefore a valuable entry point to raise awareness concerning the climate change impacts on water resources, and the impacts therefore on food security, health services, industrial needs and natural resource management.
- The project will therefore explicitly add value to ongoing interventions that do not have the capacity to absorb climate change perspectives, for example the transition the rural WASH sector is going through needs greater adaptive capacity support to identify innovative approaches, improve more flexible and forward thinking decision making for water and sanitation solutions, and to ensure lessons are learned to dramatically improve the current water governance approaches and improve resilience.

**Output 4.1. *Overarching policy and legislation for the water sector that integrates CCA components in IWRM plans drafted and advocated, including guidelines for climate resilient water supply development in vulnerable areas***

- With the advent of the new National Water Resources and Sanitation Policy for the Solomon Islands a policy window is open for SIWSAP to make significant impact to ensure that climate change is integrated within national and local level water sector policies. With Cabinet commitment to improve water resource and sanitation management through the endorsement of the policy, and the development of a National Water and Sanitation Sector Plan, there is a clear opportunity to influence the mobilization of the policy through using the current plan as the entry point. The policy states that climate extremes, disasters and climate change are a challenge to safe water supply and sanitation expansion in the Solomon Islands, and that it also poses a threat to the ecosystems people rely on to capture, store, clean and convey water. The policy classes climate extremes, disasters and climate change as a high priority policy area which will challenge the mobilization of the sector plan. According to the National Development Strategy, adaptation, and halting ecosystem deterioration are high priority concerns, and restoration of these systems is required to integrate national environmental issues and climate change and vulnerability across all sectors. National Communications to UNFCCC highlight conservation of water systems and identification of alternative ground and surface water sources as adaptation actions.
- In parallel to the development of the Provincial Water Adaptation Plans, the PMU will collect the current vulnerability mapping, information data, and climate change impacts knowledge (data, reports, project understanding) from partners and agencies. There is a wide range of information available, but in different formats and granularities – some of it funded through development partners and budget/sector support, some of it through project and programmatic funding, and some of it directly with NGO's with no or little overlap with Government. Although the Climate Change Working Group is designed to coordinate the climate change activities at the national level, many of the impacts, learning, and anecdotal evidence occurs at the Provincial level.
- A knowledge 'clearing house' will be developed with MECDM, NDMO, and MMERE-WRD to better understand the current and predicted climate change impacts on the water resources of the Solomon Islands. A key output under this Outcome will be a scientific published study that, as accurately as possible, predicts the climate change impacts on the water resources of the Solomon Islands. The study will also, moving beyond business-as-usual, make predictions of climate change impacts on water supplies for domestic households in towns, and rural water supply provision. The project will source regional expertise<sup>15</sup> to assist with the study, and will inform the implementation of the National Development Strategy through providing information to all sectors.
- Through the development of collective information on the most vulnerable areas to climate change (which will need to be extracted from those areas vulnerable to disasters alone), and in line with requests in the NAPA, guidelines for climate resilient water supply and sanitation development in vulnerable areas will be developed. Lessons learned from the pilot sites will inform the development of the guidelines, and they will be trialed at the replication sites to ensure they work in practice. The resilience framework will be used to guide the development of the guidance around diversity of options, capital (including human) and innovation required, self-organization and learning – to mobilize the rural WASH policy, and to support the transition of the MHMS-RWSS Unit from a 'construction and implementing' and into an agency focused on monitoring, capacity development and support. The guidelines should not be a large

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<sup>15</sup> Including SPC (SOPAC), SPREP, AusAID, and USAID, who are collaborating with NOAA in extending their climate services program, the Pacific Climate Information System.



cumbersome academic document, but a series of smaller briefing documents prepared with the target audience and users of the guidance in mind, and which refer to the national guidance, standards, and other information under development by MHMS-RWSS. The guidelines will also specifically take into account the need to modify building codes to improve the ability to capture and store clean water, and sanitation requirements.

- A national level Water and Adaptation Forum will take place at the beginning of Year 2 of the project (therefore implemented for 3 years). This will involve all relevant agencies, the communities and townships involved in the pilot projects, current replication sites identified, relevant Provincial agencies and stakeholders, including private sector suppliers, and National government agencies. The national level Water and Adaptation Forum will also provide the opportunity for training – and to train trainers to roll out learning gained from across projects presented at the Forum. At the end of the project, the final Forum funded by SIWSAP, a participatory evaluation of the Forum for the previous years will decide on the usefulness of the event, and make a decision about holding further events in the future funded through the national budget. In preparation for the final Forum a climate expenditure review and assessment will also be presented to indicate progress at influencing sectors and in sourcing funds to mobilize the NAPA, and to identify where there are still gaps and what further actions are required.

#### ***Output 4.2. Institutional and community capacities strengthened toward water-sector CCA formulation, implementation and monitoring at the national and local levels***

- Regional technical capacity will be sourced to assist the Water Resources Division of MMERE to establish further hydrological monitoring sites in Makira, Choiseul, and Guadalcanal, and to assist with maintenance of existing sites in Malaita and Isabel. Hydrological monitoring will be expanded to include relevant climatic/meteorological parameters to widen the network of sites used by the Meteorology Division<sup>16</sup>. Specific skills will be sourced for this, and to assess the current number and range of sites, and type of equipment used by the Solomon Islands Government. CROP agencies and others in the region such as NIWA in New Zealand will be contacted. Sites will be chosen, equipment selected and procured. Installation of equipment will be undertaken with concurrent training and capacity development in installation, operation and maintenance, data collection, interpretation and assimilation.
- Sanitation and Adaptation Partnership established with Pacific Island Countries participating in IWRM including. For example, the Pacific IWRM demonstration project in Tuvalu focuses on sanitation technologies and practices; how they can provide not only a sanitation service, but also protect primary and secondary sources of freshwater from contamination, and are the most appropriate form of sanitation approach on atolls and other islands with limited and unpredictable water supplies (mainly relying on rainfall). Tuvalu has adopted innovative approaches to garner interest, and now support for composting toilets and their use is increasing. It is critical that the Solomon Islands start to address the serious sanitation shortfall, particularly in some specific locations such as the atoll Province of Temotu and other sandy coastal areas. The work in Tuvalu has generated a lot of interest with Tonga constructing demonstration toilets, and Nauru installing composting toilets in schools. Most recently the Tuvalu IWRM team was in the Marshall Islands to trial how effective composting toilets are at reducing septic leakage into Majuro's main groundwater source, the Laura Lens. With increased climate variability and

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<sup>16</sup> The increasing variability associated with climate change as well as extreme weather events require increased **meteorological** capacity to monitor and predict such events. Accurate predictions are needed to provide reliable early warning of impending natural disasters. The present lack of meteorological equipment, coverage of stations, communications equipment and early warning systems and expertise limits the forecasting capacity for disaster management as well as warnings for maritime and air transport. Solomon Islands: National Development Strategy 2011-2020.

the possibility of more intense droughts there is an urgent need to protect existing freshwater reserves.

- Using composting toilets will, however, require significant behaviour change – one of the ambitions of the new rural WASH policy (June, 2013). Many Pacific Island countries such as Tuvalu have experience of doing this, with a strong focus on community and engagement, the inclusion of schools, a ‘roadshow’ and targeted media campaigns good progress has been made<sup>17</sup>. SIWSAP will mobilise this experience for the Solomon Islands to learn from, adapt as appropriate for Melanesia, and apply over the four years of the project. The partnership will be structured around three areas:
- *Exchange and Learning* – Pacific IWRM staff selected from the participating Pacific island Country (most likely in Tuvalu) will be supported by SIWSAP for two exchange visits to the Solomon Islands to share sanitation and adaptation experiences. This will include missions to the pilot site in Temotu Province (Tuwo), and other relevant sites in Temotu. The focus of the first visit will be an assessment of the situation to allow the PMU to develop a better baseline understanding of the behaviour change needs, and to identify with communities and Provincial and National stakeholders the most appropriate solutions and activities. Bringing Tuvalu experience to the Solomon Islands will also aid the PMU in developing a broader National Sanitation Campaign in collaboration with national partners (such as UNICEF, MHMS-EHD, etc).
- *Active Demonstration with Partners* – Through the Kastom Gaden Association (KGA) the Solomon Islands does have experience of using composting toilets, including appropriate designs and construction. There are two composting toilets just outside of Honiara in the KGA nursery which have been in consistent use for over 10 years<sup>18</sup>. Working with KGA, the Tuvalu sanitation experts, and other relevant partners, the PMU will not only design and mobilise a national campaign, but also establish demonstration sites at schools for composting toilets in the most appropriate locations. There are two main challenges to overcome: (i) using a toilet instead of open defecation in the mangroves or beach; and the (ii) choice of composting toilets as the technology. As part of the national campaign, active demonstration and explanation with communities is vital to start the process of triggering change in behaviour. The successes of Tuvalu need to be leveraged into the Solomon Islands.
- *Monitoring and Scaling-up* – the National Sanitation Campaign will provide the opportunity for dialogue and exchange with individuals, communities and their leaders, and government. The PMU will work with local partners to use these consultations to collect as much information as possible regarding sanitation usage. There is still little information on the use of sanitation and what demands there are for it – or how to most appropriately create the demand for it. In line with the rural WASH policy, SIWSAP will work with the Rural Water Supply and Sanitation Unit in the MHMS, and the Provincial Environmental Health Divisions (PEHD) to mobilise the rural WASH policy using participatory and innovative approaches – which may require tailoring<sup>19</sup>, including using the consultations as a way to collect information for monitoring

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<sup>17</sup> The film “*Falevatia: A toilet for our future*” shows how composting toilets can help conserve water and minimise threats to the environment, food security and human health in Tuvalu. Tuvalu recently experienced a devastating drought, which resulted in a national emergency and millions of dollars spent on an international relief effort to get water to the small isolated country. The current flush and septic systems used in the atolls are ill suited to Tuvalu’s geography and scarce water supplies – often using up to a third of a family’s fresh water supply. Furthermore, septic systems are often poorly constructed and much of the waste seeps out polluting fresh shallow groundwater.

<sup>18</sup> These were constructed by the current World Bank Rural Development Program engineer.

<sup>19</sup> The rural WASH policy specifically states use of the Community Led total Sanitation (CLTS) and Participatory Hygiene and Sanitation Transformation (PHAST) methodologies. It is not clear how well these methods will work in practice in the Solomon Islands. Off-the-shelf transferred approaches often do not work so well in application in the Pacific.

purposes. This approach will be designed with the RWSS-MHMS to ensure that it supports and informs the rural WASH policy, and supports the development and implementation of the new Strategic Plan for the rural WASH sector 2014-2018.

- Peer-to-Peer Learning Network – a network will be developed that links the PPG identified pilot sites, and the replication sites together across Provinces. Sites at the Provincial level will be ‘twinned’ in an approach designed to allow communities to work closer together. Resources will be made available through the project and with the Provincial Officers guiding this process, to allow sharing of experience and local skill building directly between sites per Province. They will provide valuable practical experience to inform Provincial authorities. Across the Provinces, communities involved in the project (together with Provincial Authorities) will also be twinned, depending on their activities, to enable them to learn from each other in developing their Water Vulnerability Assessment Plans, and in addressing those vulnerabilities through the Adaptation Response plans and pilot site investments. SIWSAP will actively support this national learning and exchange opportunity – demonstration sites are only valid if they can be learned from, and provide learning to others.
- Development of a National Diploma Course/Program. Building on previous approaches at both the national level (SEMRICC) and at the regional level (Pacific IWRM, PACC) the project will develop partnerships with different national and regional organisations to support capacity development. At the national level, the project will develop a partnership with the Solomon Islands National University (SINU) to develop a national diploma on ‘Water and Adaptation’. This is designed to ‘formalise’ the capacity development process and encourage future government staff and others looking at options in NGOs and the private sector to better understand adaptation and the impact of climate change on water resources. At the regional level, collaboration will be made with the Regional Pacific IWRM Project Coordination Unit based in SPC/SOPAC in Suva, Fiji and the PACC PMU based in Apia, Samoa. The Pacific IWRM project has over the years delivered a variety of training and capacity development courses including courses on hydrology and IWRM in partnership with the Australian based International Water Centre<sup>20</sup>. The opportunity for SIWSAP is to look at building a higher level course beyond the diploma level with the involvement of SINU, International Water Centre staff, and regional experience in SPC/SOPAC<sup>21</sup> and SPREP; a nationally developed and consistent course that can train future professionals.

***Output 4.3. Multi-media knowledge products on CC, CCA, IWRM, lessons learned and best practices developed and disseminated extensively to communities, schools and the general population and through ALM***

- A critical element of adaptation is communication – of the baseline (and what this actually is, and is based upon), the identified vulnerabilities and impacts, and the solutions to implement. Consultations during the PPG highlighted the surprising afterthought of climate change, despite work under the UNDP PACC project, and the development of the national Climate Change policy. There is clearly a need to better articulate climate change, adaptation, and wider water management challenges across the country. Building on the use of partnerships and learning networks the following activities will be implemented:

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<sup>20</sup> <http://www.watercentre.org/>

<sup>21</sup> For example, SOPAC developed a Hydrological Training Programme for Small Islands Countries in the Pacific 2004-2006 with NIWA and supported by NZAID. See SOPAC Training Report #126.

1. *Participatory video and video diaries.* The PMU will use, and will provide participatory video services at the identified pilot sites, replication sites, and as part of the national Sanitation Campaign. Participatory video ‘kits’ will be procured by the project and training will take place with the PMU and partners, including the Provincial Officers for application at the pilot sites. The focus of these videos will be on behaviour change, for example, changing the way groundwater is used or pumped, changing approaches and attitudes to rainwater and hygiene, changing sanitation practices and beliefs.
  2. *Theatre and Stories.* Pacific culture in general is very much oral/aural; related to stories and the passing on of knowledge and experience through discussion and learning-by-doing. Many elderly people in villages are valuable sources of information in understanding historical trends in weather patterns, tree growth, coastal erosion, dry periods, storms and cyclones etc. This has been used to good effect in Kiribati where knowledge in villages has helped to confirm changes in lagoon shape, shifting sand dunes, etc. Building on this history of storytelling and dialogue, Melanesian theatre groups are well renowned for their approach and the project will commission theatre groups to support the communication needs of SIWSAP. Local, and regional Melanesian groups<sup>22</sup> will work together to develop a programme that is aimed at schools, rural training centres (RTC’s), Churches (and their networks) and communities on climate change, adaptation, water resource protection and pollution, and sanitation.
- *Communication Sharing.* All materials will be made available nationally and regionally. National materials will be focused on the oral/aural – using video and radio, although these will be appropriately documented. Other considerations include the development of the project ‘brand’, and the development of a project logo. These activities will be discussed during the inception phase of the project. Knowledge products will be shared with national and regional adaptation networks such as the Asia-Pacific Adaptation Learning Network and the Adaptation Learning Mechanism (ALM). Communications is key to this project. The Mid-Term Evaluation of the PACC project<sup>23</sup> highlighted the importance of communications for capacity development and the critical area of sharing experiences and knowledge to learn and shape behaviors change approaches together with communities. This is critical for SIWSAP to have success on-the-ground at pilot and replication sites, and in influencing the wider Province to National level. The PMU must focus on communications as a core and often overlooked element of project implementation.

A.6 Risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and measures that address these risk

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<sup>22</sup> For example, Won Smolbag based in Port Vila, Vanuatu are a highly experienced Melanesian theatre group who also have experience with radio stories and shows. They also have Solomon Island performers and can conduct shows in English and Pidgin.

<sup>23</sup> PACC Solomon Islands MTE Report 23.Oct.2012 draft

#	Description	Date Identified	Type	Impact & Probability	Countermeasures / Mngt response	Owner	Submitted, updated by	Last Update	Status
1	Civil unrest	Pre-PPG Phase	Operational Organizational Political Other (Safety)	The project would be unable to function due to limited ability of government to function, travel restrictions, safety concerns. P = 1 I = 5	Monitoring of political and security situation by UNDP Regular discussions with Government				
2	Weather impedes travel to Provinces, in some cases for months. Health and safety concerns with outer islands and drought weather/boat rides. Extreme natural events	Aug 2013	Environmental Operational	Delay in implementation at field sites, and in participation from outer islands Health and safety of project staff and partners  P = 2 I = 4	Avoiding travel during times of the year when the weather is known to be changeable and rough seas Project will purchase 2 safety kits for boat travel containing lifejackets, strobe, satellite phones, other emergency equipment				
3	Insufficient ownership of pilot site interventions by communities involved	Aug 2013	Operational Organizational	P = 1 I = 4	Consistent support to communities with local project staff at the Provincial level and their direct involvement in shaping pilot site interventions and in delivering the project. As the project outputs and outcomes will benefit communities directly, it is expected that cooperation will be at the highest level. Participatory approaches through IWRM, capacity building and communications will build strong ownership by communities. The project will also explore in-				

					kind inputs from communities, where feasible.				
4	Limited capacity in government agencies (national and provincial) to implement the project and sustain project outcomes	Aug 2013	Operational	It may be difficult to find the Project officers required at Provincial and National level with the skills needed, making pilot site implementation difficult  P =2 I = 4	Provincial officers will be recruited with Provincial Administration support. PMU will assist the officers in their duties with quarterly review meetings on progress. Strengthening water governance is one of the project components. This would cover capacity building of government partners and communities in all aspects of the project and post-project activities. Ownership of the project by the partners will be ensured by letting them take the lead with assistance from the project team.				
5	National and provincial administrations are unable to secure budget allocations at end of project for adaptation	Aug 2013	Organizational	Medium to long term impact of project is put at risk  P =2 I = 3	The project is specifically designed to work at the Provincial level with the administrations to highlight the adaptation costs and implications throughout the project				
6	Inappropriate use of sanitation increases pollution	Aug 2013	Environmental Regulatory	Poor use of sanitation interventions may pollute fresh water  P =1 I = 4	Sanitation will only be developed in areas where pollution risks can be minimised, using closed systems or compost toilets (eco-san). All sanitation interventions will be development with a monitoring plan				
7	Large tracts of land under customary ownership could be an	Aug 2013	Political Cultural	Lack of site access, reduction of pollutants, or inability to protect water sources	The IWRM process in formulating CCA plans will undertake consultative and transparent processes, including with landowners. The co-benefits from				

	impediment to spatial approaches in CC-A IWRM if landowners do not cooperate			P = 1 I = 3	IWRM through partnerships will be emphasized with landowners.				
8	Weak coordination and collaboration amongst project partners may impede project progress	Aug 2013	Organizational	P = 2 I = 3	The project will support the initiative of the MECDM to sustain (convened in October 2011): Climate Change Working Group (CCWG); Sub-Group of Development Partners within the CCWG; Sub-Group of Government and NGO Partners within the CCWG; Annual Environment Donors Roundtable; and Environment Summit. This initiative aims to strengthen partnership among partners, leadership by government and coordination among stakeholders. The Initiative is currently being discussed and project will support the coordination mechanisms that will be promulgated through this Initiative.				
9	The increase of people entering communities due to the placement and/or enhancement of water resources in the target sites may cause conflicts and/or disputes regarding water and land access	Aug 2013	Political Cultural	P = 2 I = 3	In order to mitigate these risks, proper assessment of siting as well as participatory engagement and awareness-raising are integrated into the design of this project. Furthermore, operation manuals will be developed and disseminated (i.e. community guidelines on water) so that water can be accessed peacefully and equitably by the target community members.				
10	Lack of	Aug	Operational	P = 4	Skills training on maintenance will				

	<p>maintenance of water facilities improved or placed through project investments</p>	<p>2013</p>		<p>I = 3</p>	<p>be provided throughout the project period during the design and implementation of interventions in the pilot sites. Furthermore, during the planning of the WS-CCAR plans, maintenance costs will be considered and budgeted exploring innovative solutions to finance community-level skills training and maintenance.</p>				
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## A.7 Coordination with other relevant GEF financed initiatives

- Coordination of this project with other related initiatives will be through the recently organized **Climate Change Working Group (CCWG)** which includes two subgroups: **Development Partners CCWG** and **Government and NGO Partners CCWG** and the holding of **Annual Environment Donors Roundtable and Environment Summit**. The CCWG calls for a strong partnership between stakeholders on matters relating to environment and conservation, climate change, disaster risk and management and meteorology. The CCWG is composed of the Solomon Islands Government (SIG), development partners, regional organizations, representatives from NGOs and civil society and others (potentially private sector), with the secretariat based at MECDM. The CCWG is expected to meet quarterly to: provide framework for policy dialogues and consultations; promote networking amongst members and share lessons learned; provide a platform to the Ministry to update its partners on policy priorities and the implementation of policies, NAPA and ongoing activities in the sector; and play an oversight role with views of further improving coordination, planning, implementation, monitoring and evaluation of programs in the environment, climate changes and disaster risk reduction sector. The CCWG was first convened in October 2011 and UNDP is providing assistance to strengthen it through the SEMRICC project.
- The project will coordinate with the following GEF financed initiatives:
  - i) **Pacific Adaptation to Climate Change Project** – This UNDP-GEF (SCCF)-funded regional project is also working in Solomon Islands supporting communities in remote outer islands to enhance resilience of food security systems including support for water catchment and storage. This project is funding the development of the national climate change project and mainstreaming of climate change into sector policies. Synergies in governance-related activities will be worked out with this project. There potential synergies will be identified during the design phase.
  - ii) **Pacific Integrated Water Resources Management Project** – Another UNDP-GEF regional project targets water supply and demand in the capital city of Honiara using the IWRM approach. The demonstration site for this project is implemented by WRD, the same agency that will implement SIWSAP. Lessons emerging from the application of IWRM in this project are useful to guide the SIWSAP project. The focus of SIWSAP will be rural areas so it will not duplicate any activity of the Pacific IWRM project in Honiara.
  - iii) **Integrated forest management in the Solomon Islands** is currently being developed by FAO in partnership with the Ministry of Environment, Climate Change, Disaster Management and Meteorology, Ministry of Forest and Research, and Ministry of Agriculture and Livestock to be funded by GEF. The proposed project aims to improve the management of forest in the Solomon Islands by integrating biodiversity conservation, sustainable forest management (SFM) and climate change issues at the national level and livelihood activities of local communities living in and around forests. As forest management relates closely with enhancing quality and quantity of water resources, SIWSAP will work closely with the development and implementation of this project to ensure synergies and alignment at both national levels and in the pilot sites.

### Other relevant non-GEF initiatives

- The relevant initiatives are described below and the areas for synergy and collaboration are identified initially and will be finalized at CEO endorsement. Most of the major relevant projects are implemented by UNDP hence ‘internal’ coordination will be facilitated.
  - i) **Enhancing the Resilience of Communities in Solomon Islands to the Adverse Effects of CC in Agriculture and Food Security Project** – This 4-year project funded by the Adaptation Fund Board is implemented by UNDP as MIE. The project will be providing training in vulnerability and adaptation as

well as disaster risk reduction training and will be assisting rural communities enhance the resilience of farming systems and food production systems including support for improving water catchment and storage. Close coordination with this project will be done to achieve complementation particularly in the site-based with respect to potential geographic overlaps and the application of IWRM. Governance-related activities present another potential area for collaboration.

ii) **Community Resilience to Climate and Disaster Risk in Solomon Islands Project (CRISP).**

This is a project currently being developed by the World Bank that will seek funding from LDCF. The proposed development objective is to increase the resilience of selected communities to the impacts of climate change and natural hazards by strengthening government capacity in disaster and climate risk management, and in implementing disaster risk reduction and climate change adaptation investments in selected communities in Guadalcanal and Temotu provinces. Potential areas of collaboration, particularly where geographic overlaps exist, will be identified during project preparation.

iii) **Provincial Governance Strengthening Project (PGSP)** – This project implemented by UNDP and funded by UNDP together with other donors (UNCDF, EU and AusAID) is strengthening the capacity of Provincial Governments to plan and implement development programmes as well as in administration of provincial affairs. It covers 9 provinces in the Solomon Islands. One of the objectives of PGSP that is relevant to this proposal is the development of a Monitoring and Evaluation system which could be utilized by SIWSAP. The SIWSAP will need to work closely with provincial governments for the planning and implementation of provincial based projects. Provincial governments also fund water supply projects and there is the opportunity for SIWSAP to assist Provincial governments mainstream IWRM and CCA, which represents a concrete area for collaboration. Synergy will be sought to avoid any duplication of activities.

iv) **Rural Constituency Development Funds** – Each constituency is provided about S\$2,000,000 (about US\$256,000) to finance infrastructure, healthcare, water treatment, electricity, sanitation and telecommunications projects. The funds are under the control of the Members of Parliament (MPs). During the PPG phase, the project will explore collaboration with the MPs in the project sites to the extent that allocation for such funds includes water and sanitation.

v) **Solomon Islands Red Cross Participatory Health and Sanitation Project and Climate Change Program** – In 2007, SIRC formulated its Preparedness for Climate Change Programme and several activities have been implemented. Part of the disaster management component of the program is Vulnerability Capacity Assessment (VCA) which works with communities in disaster prone areas using VCA tools to facilitate and gather information and help them decide on suitable coping strategies. The VCAs have brought communities to work together in risk reduction activities. A related WatSan activity of SIRC is the Tugeda Uime Waka for Helti Komuniti, which provides communities with knowledge and skills to help them improve health and hygiene practices, as well as supply equipment and the technical support to help them change their environment. SIRC help communities prepare for and respond to disasters (taking CC into account) and with the support of the Australian Red Cross, they train staff for long-term support for disaster management. SIRC is already using CCA (and DRR) approach but is still to mainstream IWRM. Lessons learnt from CCA approach can help guide interventions under this project. SIRC's activities are very limited but their experience in their sites will be useful for SIWSAP.

vi) **World Vision Water, Sanitation and Hygiene (WASH) Project and Adventist Development and Relief Agency (ADRA).** World Vision and ADRA assist rural communities and schools with water supply and sanitation projects including improving children's practices in healthy water, sanitation and hygiene behavior. World Vision and ADRA are the partners in the identified baseline project funded by AusAID.

vii) The Asian Development Bank is currently developing a regional LDCF adaptation program for some Pacific SIDS. The program entitled '**Climate Proofing Development in the Pacific**' intends to climate-proof a small-scale hydro-power in the Solomon Islands. The climate-proofing of infrastructure is a potential area for collaboration between the ADB program and SIWSAP.

**B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:**

**B.1 Describe how the stakeholders will be engaged in project implementation.**

- Key activities regarding the involvement of stakeholders are different levels will be to guide project advocacy and communications work to ensure it is socially relevant to the culture of the Solomon Islands, and to also develop more innovative approaches than standard, and often not very inspiring communications material. The National Water and Adaptation Forum for example will be developed jointly with stakeholders as the primary annual event, but they will also be consulted for specific advice relevant at the Provincial level, for example for Choiseul Province using the CHICHAP Partners Advisory and Implementation Group. Meetings and discussions with stakeholders during the PPG Phase highlighted the recognition of adaptation concerns and lack of information, but also the lack of direction in terms of where to go for advice, information, data, and what platforms for discussion existed. Stakeholders will help guide the project to answer these questions.
- A wide range of stakeholders will be involved in the project, tailored to the specific needs of the four project outcomes. A crucial component of PPG activities was to consult on the detailed design for stakeholder engagement. Key stakeholders to be engaged include a range of government line ministries to implement and support the project implementation, NGOs, project site-specific Provincial Governments and local communities including some of their interest/community groups. In general, stakeholder engagement will build on the PPG Phase, and initially begin at the inception workshop which will be held within the first twelve months of project start. However, recruitment of the PMU positions, specifically the Project Manager will start the stakeholder engagement process, through meetings and initial discussions as the PMU establishes its own ‘network’ of contacts across institutions and projects/programmes.
- The Inception Workshop should address a number of key issues, starting with assisting all development partners to fully understand and take ownership of the project, detail the roles, support services and complementary responsibilities of all delivery/implementation agencies included in the project organization structure, and discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. A stakeholder engagement process will also be initiated at the inception workshop.
- Based on consultation during the PPG Phase, the table below identifies the expected role of different stakeholder groups in the project including some of the initial activities, and the Outcomes they will support.

Stakeholder	Involvement During PPG and Expected Full Implementation Role
Water Resources Division of the Ministry of Mines, Energy and Rural Electrification	<ul style="list-style-type: none"> <li>• Main SIWSAP Executing Agency for the entire project</li> <li>• Part of the PPG Team for pilot missions</li> <li>• In-kind and co-finance support to the project through budget</li> <li>• Coordinate policy and legislation development</li> <li>• Hydrological monitoring and water resource assessments</li> <li>• Water quality monitoring</li> <li>• Coordinate access and partnership arrangements with customary</li> </ul>

	<p>landowners</p> <ul style="list-style-type: none"> <li>• Take lead in seeking public-private partnerships</li> <li>• Support to community engagement and development of project best practice materials</li> </ul>
Rural Water Supply and Sanitation Programme of the Ministry of Health and Medical Services	<ul style="list-style-type: none"> <li>• Secondary SIWSAP Executing Agency</li> <li>• Coordinate and implement rural water supply projects</li> <li>• In-kind support to the project working with PMU on pilot site and investment designs and interventions</li> <li>• Development of standards and guidelines for RWSS projects</li> <li>• Implementation agency for Outcomes 2 and 3, working closely with MMERE-WRD and Provincial Authorities</li> <li>• Support to community engagement and development of project best practice materials</li> </ul>
Climate Change Division – Ministry of Environment, Climate Change, Disaster Management and Meteorology	<ul style="list-style-type: none"> <li>• Assist with mainstreaming of climate change activities</li> <li>• Further Development of climate change policy through review and learning</li> <li>• Provide guidelines and training in V&amp;A assessments to develop WS-CCAR framework and plans</li> <li>• Support the National Water and Adaptation Forum</li> <li>• Provide vulnerability information and climate relevant information to the project</li> <li>• Guide the implementation of Environment Impact Assessment for water projects (where required by law)</li> <li>• Support to community engagement and development of project best practice materials</li> </ul>
National Disaster Management Office	<ul style="list-style-type: none"> <li>• Assist with mainstreaming of DRR and provide training</li> <li>• Assist provincial governments with disaster preparedness and coordination of village disaster committees</li> <li>• Assist PMU with pilot site interventions</li> <li>• Support the National Water and Adaptation Forum</li> <li>• Support key community activities under Outcome 2 related to community based early warning</li> <li>• Support to community engagement and development of project best practice materials</li> </ul>
Ministry of Lands and Housing	<ul style="list-style-type: none"> <li>• Provide guidance on land owner identification, consultations and partnership building, community consultations</li> </ul>
Ministry of Forests and Research	<ul style="list-style-type: none"> <li>• Support with catchment management activities where necessary</li> </ul>
Ministry of Infrastructure Development	<ul style="list-style-type: none"> <li>• Design and construction of water supply infrastructure – at the</li> </ul>

	Provincial level Works
Provincial Governments	<ul style="list-style-type: none"> <li>• Mainstreaming of climate change adaptation</li> <li>• Identification of project sites</li> <li>• Monitoring of project activities, in-kind support to project delivery</li> <li>• Review of pilot site designs and interventions, and sign off WITH the SIWSAP Provincial Officer and SIWSAP PMU</li> <li>• Management and implementation of provincial urban water supply system in partnership with Solomon Islands Water Authority</li> <li>• Support to community engagement and development of project best practice materials</li> </ul>
Solomon Islands Water Authority	<ul style="list-style-type: none"> <li>• Provide guidance on supply and demand management approaches – especially for township sites</li> </ul>
School of Industrial Development of the Solomon Islands College of Higher Education	<ul style="list-style-type: none"> <li>• Development of training materials and provide training for community based water technicians</li> <li>• Assist in training and learning and formal training during implementation</li> </ul>
Community organizations	<ul style="list-style-type: none"> <li>• Implement WS-CCA projects as major partner in the project</li> <li>• Establish governance arrangements for IWRM</li> <li>• Contribute labor and materials, and ideas, and energy, and enthusiasm for project activities</li> </ul>
Solomon Islands Meteorological Services	<ul style="list-style-type: none"> <li>• Develop and assist communities and provincial governments with early warning systems and information for community based disaster preparedness</li> <li>• In-kind provision of information and data to the project</li> </ul>
Ministry of Finance and Treasury	<ul style="list-style-type: none"> <li>• Mainstreaming of Climate Change into national and provincial budgets, through the Province to National process of learning from project pilots</li> </ul>
Ministry of Development Planning and Aid Coordination	<ul style="list-style-type: none"> <li>• Coordinate donor support towards the water sector</li> <li>• Mainstream climate change into development budgets</li> <li>• Coordinate national-level resource mobilization strategies for the water sector</li> <li>• Learning from the project to help guide future investments</li> </ul>
Ministry of Rural Development	<ul style="list-style-type: none"> <li>• Mainstreaming of IWRM and CCA into water supply and protection projects funded under the Constituency Development Fund</li> </ul>
Solomon Islands National University	<ul style="list-style-type: none"> <li>• Support Outcome 4 of the project relating to capacity development support through development of a national diploma</li> </ul>

Solomon Islands Red Cross; World Vision; Adventist Development and Relief Agency; Caritas; other NGOs and church-based organizations working on water and sanitation	<ul style="list-style-type: none"> <li>• Plan and implement community based water supply and sanitation projects using IWRM and CCA approaches</li> <li>• Plan and implement community based early warning work</li> <li>• Invest in-kind support in networks and learning</li> </ul>
Private Sector Companies	<ul style="list-style-type: none"> <li>• Design and provision of water supply materials and equipment; public-private partnerships in provision of services and infrastructure</li> <li>• Better understand challenges to implements projects and supply chain risks for material and supplies for Provincial Governments and communities</li> </ul>
SPC and SOPAC	<ul style="list-style-type: none"> <li>• Provide inputs to the water resilience measure and capacity development through sharing knowledge and lessons learned through the Pacific IWRM project</li> <li>• Provide inputs and assistant to learning activities as well as participate in knowledge sharing/networking activities</li> <li>• Facilitate coordination and synergies between SIWSAP and other related regional activities related to climate change adaptation in the water sector</li> </ul>
AusAID	<ul style="list-style-type: none"> <li>• Provide co-financing to the project through their budget support to MDPAC</li> <li>• Participate in key workshops and coordination meetings in order to ensure alignment and synergies in areas of work related to climate adaptive water resource management, sanitation, and hygiene</li> </ul>
EU	<ul style="list-style-type: none"> <li>• Provide co-financing to the project through their budget support to MDPAC</li> <li>• Participate in key workshops and coordination meetings in order to ensure alignment and synergies in areas of work related to climate adaptive water resource management, sanitation, and hygiene</li> </ul>
USAID	<ul style="list-style-type: none"> <li>• Participate in key workshops and coordination meetings in order to ensure alignment and synergies in areas of work related to climate adaptive water resource management, sanitation, and hygiene</li> </ul>

**B.2 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/NPIF) or adaptation benefits (LDCF/SCCF):**

- There are a number of important national benefits that this project will contribute to. As described earlier in the country overview more than 70% of the national population i.e. more than 360,000 people benefit from communal water systems and natural water sources and do not rely on government managed water supply systems. Many of these supply systems are dependent on water catchments and underground aquifers that are very sensitive to the hydrological cycle and its

disturbances, most of which are related to climate change. A breakdown in governance or a change in land-use and management practices can quickly negatively affect the ecosystem services provided even by areas that are protected and well managed. For Honiara area alone the cost of replacing hypochlorite dosing equipment at all sites is provisionally estimated at SBD 650,000 and the operating cost is around SBD 200,000 per annum (SBD 7.8 per USD). This indicates that the government can have significant cost savings if it supports rural populations to care for their water sources and prepare them to be more resilient in light of climate impacts. With the very low levels of income in rural areas it would be impossible to sustain expensive water supply systems.

- As is seen throughout the developing world, there is a clear correlation between limited access to clean water and incidences of diseases such as dysentery. Human Development is more closely linked to Water and Sanitation (WatSan) than any other variable, including health, education, gender equality and access to modern energy services (UNDP HDR 2006). Statistics on access to sanitation services in Solomon Islands shows that 57% of all households have no proper toilet facilities, 21% using pit latrines and the 22% using toilet systems that require water (Solomon Islands Census 2009). It comes as little surprise that between 2002 and 2008 the incidence of diarrheal diseases has been on a steady increase according to the 2008 Annual Health Report (MHMS 2009).
- Improvements to water supply will also result in more people having access to proper sanitation facilities, potentially reduce prevalence of disease and reduced costs to the people and to government's social services. In a country with marked gender inequalities and where women do most of the work in water harvesting, cooking and sanitation improvements in access to water and sanitation services will greatly reduce the burden on women. All these benefits from SIWSAP will improve the quality of life of the beneficiaries.
- UNDP estimates that water supply investment has an economic return of \$4.4 to \$1 while investment in sanitation has a return of \$9.1 to \$1. Some of the multiplier effects of investing in water and sanitation include; healthy workers, savings on medicines, bottled water not required, boost to agriculture and healthy tourists. With logging about to end in the country and with it the bulk of government revenue, tourism has been identified as a potential new income source for the country. A very low investment in WatSan will place high risks to tourists resulting in low visitor numbers and low income for the country as a whole. Effective management and governance in the water sector will also provide better opportunities for the country to harness its water resources as a renewable energy. Currently more than 90% of the country's source of energy is from imported fossil fuels.
- Another potential benefit from this project is the strengthening of social capital that is so essential for increasing resilience and adaptive capacity against climate change impacts. In addition, the participatory community based approaches in the IWRM and CCA approaches can contribute to stronger community level governance an area that is weak and fast declining in Solomon Islands (Lane 2008). More than 80% of land on which there are catchment areas and underground aquifers are customary-owned by clans and tribes. Strengthening community-based governance and management of customary land and important resources such as water catchments and similar capacity building in government institutions to enforce regulations is critical for Solomon Islands to become more resilient to climate change.
- Increasing preparedness and enhancing resilience of the water sector to extreme events can potentially reduce the cost to government for disaster relief. Over the past few years flooding, king tides, excessive rainfall and storm surges have rendered rural locations and communities as disaster areas

with the frequency of calls for disaster relief assistance from the national government reaching levels never before experienced in the country since it attained political independence in 1978. A typical example is the flooding incident that occurred on west Guadalcanal early in 2008 that devastated several villages and killing 9 people. The rainfall recorded for Honiara weather station within 12 hours during the night of the flooding was the highest daily rainfall ever recorded for Honiara in its 30 years record (standing at 251.8mm).

### **B.3 Explain how cost-effectiveness is reflected in the project design:**

- As an alternative, moving ‘backwards’ into single sectoral solutions for water management are no longer valid options. Integrated Water Resources Management has become the global standard approach to water resource management, and increasingly the recognition globally is that this approach itself is in need of upgrading to better introduce the complications between sectors, the ‘nexus’ where the greatest challenges, often triggered through existing and increasing climate variabilities are exposed. One ‘sector’ of the water community-of-practice that has suffered from a singular approach has been the water supply and sanitation community. Driven by MDG targets and other concerns, quite rightly, the WASH sector has focused on service delivery. Despite this, sustainability of WASH interventions is often poor, ranging from between 30-70% globally after 3 to 5 yrs. Engineering and ‘relief’ agency thinking has dominated the need to provide a service, but has not paid adequate attention to the community and social side of WASH – gender, capacity development, operation and maintenance training, community responsibility, establishing funds for maintenance and expansion, protecting surface and groundwater sources, conserving watersheds, etc.
- The reality, starkly explained in the Solomon Island Government rural WASH policy (draft, June 2013) explains that inadequate attention has been paid to the softer side of provide rural WASH services – and that the capacity development and monitoring needed to deliver these services needs to come from external service providers – changing the way Government works on these issues. Consequently, this approach, this admittance of the need to change, and the development of a policy to change the process, after a period of change and ‘bedding in’ the new role, will allow the government to become much more cost effective at delivering rural WASH services. This project is designed to aid that process, and to build capacity to reduce historically failed WASH and water resource management investments.
- The project is based on a resilience framework to structure the interventions, and for self-monitoring purposes by the Project Management Unit to ensure that project interventions contribute to building resilience, using the Water Sector Climate Adaptation Responses plans as entry points into pilots sites, replication sites, and wider across Provinces. Cost effectiveness is a key element of water resource management following IWRM principles. IWRM is a cost effective mechanism because of the cross cutting and multi-sectoral issues, reducing transaction costs and improving communication and influence. This project is not just dealing with water, but will help understand the water and climate linkages and the impacts of climate and the island ecosystems that capture, store, clean, convey, and provide water. Building capacity in IWRM approaches and the necessary planning and management skills so critical in the delivery of IWRM will not only improve the collaboration between sectors (and therefore GEF Focal Areas: Biodiversity, Climate Change, IW) leading to global environmental benefits, through for example prevention of land degradation, protection of international waters, and adapting to climate change, but it will also increase the efficiency and effectiveness of GEF support to PICs as a nationally implemented project, thereby enhancing the cost-effective achievement of both global environmental and national sustainable development goals.



For example:

- Focusing at the Provincial level, and investing in the development of Provincial Water Plans is where changes are desperately needed in mobilizing IWRM approaches, improved rural WASH delivery, and a greater understanding of adaptation impacts and responses, including reducing risks from disasters and other climate related threats. Centralized Government responses are not the most cost effective or efficient approaches in moving forward rapid learning, and often come with high transaction costs. This project will improve this process over a four year period using pilot sites to demonstrate change, at the same time using a twin-track strategy to also focus on policy development, mobilization and learning on new policies to build in understanding of how new policies perform in practice, and actually embed staff at the Provincial level.
- More collection and analysis of hydrological and meteorological data and information, including community based information and anecdotal records. This information is needed to help build national understanding of climate and hydrological sciences, and to ensure that this is taken to Provincial level to inform decision making, rather than staying 'held' in central departments in Honiara. Investments in hydrological and climatic data collection and the development of a clearer national picture, through other projects, Government and improved scientific understanding will improve the overall knowledge of the country to climate risks and hazards. Adding to the existing hydro-climatic monitoring network is cost effective in terms of providing better information across sectors using the current network (and not developing parallel processes), and across Government and society to better prepare for climate change, cyclones, and other weather events.
- SIWSAP Provincial Officers will be key communicators between the pilot sites, the Provincial Administration and provincial stakeholders and partners including the water initiatives funded by other donors as co-financing support to this project. The PMU will therefore be cost effectively networked across almost the entire country, saving logistical time and costs, reducing the risk of travel delays due to weather hazards, and placing the Provinces at the heart of the project.
- By feeding information and lessons learned into appropriate networks, especially by sharing lessons nationally, this project will step outside of conventional and costly project silo approaches and develop a national dialogue on water and climate change. This also has relevance wider across the Pacific, and into other islands such as Caribbean and African SIDS. There is a real cost effective opportunity to widen the scope of the initial investment at pilot sites and support the Solomon Islands in capacity development to increase resources and abilities to continue approaches initiated under this project. Lessons learned will add value to national, regional, inter-regional learning and will help inform the GEF International Waters and Climate Change Adaptation portfolio using endemic and new evidence based national knowledge. This will be shared with the UNDP ALM and the IW:LEARN knowledge platforms.
- Equally, taking WASH promoters and working with them on wider water resource management issues, especially the need to focus on medium to longer term water and adaptation concerns, using the WSCCAR plans to identify options builds resilience into other programmers, such as supporting the EU funded Building Human Development: Improving WASH in the Solomon Islands project, the EU sector reform funded Improved governance and access to WASH for rural people programme, CHICHAP, and the ongoing AusAID funded (SIACWSI) programme. As a project, SIWSAP has

multiple entry points into other project and programmes using IWRM concerns<sup>24</sup> as a mechanism to raise adaptation awareness and interventions is a cost effective entry point into multiple sectors.

### **C. Describe the budgeted M& E plan:**

- The project will be monitored through the following monitoring and evaluation (M&E) activities. The M&E budget is provided in the table below. Project monitoring and evaluation will be conducted in accordance with established UNDP and GEF procedures. The Project Results Framework in Section III of the project document already provides baseline and target indicators and sources of verification at the Outcome level during project implementation. These will form the basis on which the project's M&E system will be built. A detailed M&E Plan will be finalised within the first 6 months of the project based on review of the Pilot Project Designs and, where required, refinement of the Pilot Projects will take place within a maximum of 9 months from project start. This refinement process will be lead by the PMU.
- **Project start.** A Project Inception Workshop will be held within the first 2 months of project start with those with assigned roles in the project organization structure, UNDP country office, the Project Manager and any other PMU staff already recruited, and where appropriate other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan. The Inception Workshop should address a number of key issues including:
  - a) Assisting all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of all agencies included in the project organization structure, using the Terms of Reference provided as guidance. Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff, and the organizational structure of the project will be discussed again as required;
  - b) Based on the project results framework finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks. The workshop provides the opportunity to decide on monitoring protocols for indicators (do they need to be specifically collected by the project, or can stakeholders provide this information through other activities<sup>25</sup>);
  - c) Provide a detailed overview of reporting, monitoring and evaluation requirements, including presenting the Monitoring and Evaluation plan and budget, for agreement and appropriate scheduling;
  - d) Discuss financial reporting procedures and obligations, and arrangements for the annual audit;
  - e) Plan and schedule Project Board meetings. Roles and responsibilities of all project organisation structures should be clarified and meetings planned. The first Project Board meeting should be held within the first 12 months following the inception workshop.
- An **Inception Workshop report** is a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the workshop.
- **Quarterly basis.** Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform, and will include:

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<sup>24</sup> 'Concerns' meaning the impact of climate change on water resources, and the knock-on effects on this on human health, sustaining livelihoods, food security, national development.

- Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high. Note that for UNDP GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical).
  - Based on the information recorded in Atlas, a Project Progress Report (PPR) can be generated in the Executive Snapshot.
  - Other ATLAS logs will be used to monitor issues, lessons learned etc... The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.
- **Annual basis. Annual Project Review/Project Implementation Reports (APR/PIR):** This key report is prepared to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and GEF reporting requirements. The APR/PIR includes, but is not limited to, reporting on the following:
    - Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative)
    - Project outputs delivered per project outcome (annual).
    - Lesson learned/good practice.
    - Annual Work Plan and other expenditure reports
    - Risk and adaptive management
    - ATLAS QPR
- **Periodic Monitoring through site visits.** UNDP CO and the UNDP RCU will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Board members.
- **Mid-term of project cycle.** The project will undergo an independent **Mid-Term Evaluation** at the mid-point of project implementation (tentatively from July 2016). The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO, based on guidance from the Regional Coordinating Unit and UNDP-GEF, together with the PMU. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office Evaluation Resource Center (ERC). The LDFC/SCCF AMAT as set out in the Project Results Framework will also be completed during the mid-term evaluation cycle.
- **End of Project.** An independent **Final Terminal Evaluation** will take place three months prior to the final Project Board meeting and will be undertaken in accordance with UNDP-GEF guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and

the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF, together with the PMU. The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC). The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation.

- During the last three months, the PMU will prepare the Project Terminal Report. This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.
- **Learning and knowledge sharing.** Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums.
- The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Finally, there will be a two-way flow of information between this project and other projects of a similar focus<sup>26</sup>.
- The table below includes an indicative M&E workplan and corresponding budget for SIWSAP.

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Inception Workshop and Report	<ul style="list-style-type: none"> <li>▪ Project Manager and PMU</li> <li>▪ UNDP CO, UNDP GEF</li> </ul>	Indicative cost: 10,000	Within first three months of project start up
Measurement of Means of Verification of project results.	<ul style="list-style-type: none"> <li>▪ UNDP GEF RTA/Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members.</li> </ul>	To be finalized in Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on <i>output and implementation</i>	<ul style="list-style-type: none"> <li>▪ Oversight by Project Manager</li> <li>▪ PMU</li> <li>▪ External consultants as required</li> </ul>	To be determined as part of the Annual Work Plan preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	<ul style="list-style-type: none"> <li>▪ Project Manager and PMU</li> <li>▪ UNDP CO</li> <li>▪ UNDP RTA</li> <li>▪ UNDP EEG</li> </ul>	None	Annually
Periodic status/ progress reports	<ul style="list-style-type: none"> <li>▪ Project Manager and PMU</li> </ul>	None	Quarterly
Mid-term Evaluation	<ul style="list-style-type: none"> <li>▪ Project Manager and PMU</li> <li>▪ UNDP CO</li> <li>▪ UNDP RCU</li> <li>▪ External Consultants (i.e. evaluation team)</li> </ul>	Indicative cost: 40,000	At the mid-point of project implementation.
Final Evaluation	<ul style="list-style-type: none"> <li>▪ Project manager and team,</li> </ul>	Indicative cost : 40,000	At least three months

<sup>26</sup> For example with the Pacific IWRM Programme, <http://www.pacific-iwrm.org/> and the Pacific Adaptation To Climate Change Project, <http://www.sprep.org/pacc>, and others.

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
	<ul style="list-style-type: none"> <li>▪ UNDP CO</li> <li>▪ UNDP RCU</li> <li>▪ External Consultants (i.e. evaluation team)</li> </ul>		before the end of project implementation
Project Terminal Report	<ul style="list-style-type: none"> <li>▪ Project Manager and PMU</li> <li>▪ UNDP CO</li> <li>▪ local consultant</li> </ul>	None	At least three months before the end of the project
Audit	<ul style="list-style-type: none"> <li>▪ UNDP CO</li> <li>▪ Project manager and team</li> </ul>	12,000 (indicative cost per year: 3,000)	Yearly
Visits to field sites	<ul style="list-style-type: none"> <li>▪ UNDP CO</li> <li>▪ UNDP RCU (as appropriate)</li> <li>▪ Government representatives</li> </ul>	For GEF supported projects, paid from IA fees and operational budget	Yearly
<b>TOTAL indicative COST</b> Excluding project team staff time and UNDP staff and travel expenses		US\$ 102,000 (+/- 5% of total budget)	

### Communications and visibility requirements

- Full compliance is required with UNDP’s Branding Guidelines. These can be accessed at <http://intra.undp.org/coa/branding.shtml>, and specific guidelines on UNDP logo use can be accessed at: <http://intra.undp.org/branding/useOfLogo.html>. Amongst other things, these guidelines describe when and how the UNDP logo needs to be used, as well as how the logos of donors to UNDP projects needs to be used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo. The GEF logo can be accessed at: [http://www.thegef.org/gef/GEF\\_logo](http://www.thegef.org/gef/GEF_logo). The UNDP logo can be accessed at <http://intra.undp.org/coa/branding.shtml>.
- Full compliance is also required with the GEF’s Communication and Visibility Guidelines (the “GEF Guidelines”). The GEF Guidelines can be accessed at: [http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08\\_Branding\\_the\\_GEF%20final\\_0.pdf](http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08_Branding_the_GEF%20final_0.pdf). Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items. Where other agencies and project partners have provided support through co-financing, their branding policies and requirements should be similarly applied.


**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 form. For SGP, use this OPF endorsement letter)

NAME	POSITION	MINISTRY	DATE (MM/DD/YYYY)
Mr. Joe HOROKOU	Director	Environment and Conservation Division Ministry of Environment, Climate Change, Disaster Management and Meteorology	April 5, 2012

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

<b>This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.</b>
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Agency Coordinator, Agency name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Adriana Dinu, Officer-in-Charge, and Deputy Executive Coordinator, UNDP/GEF		Dec. 20, 2013	Jose Erez Padilla (Gr-LECRDS)	66 (0) 2304 9100 Ext.2644	jose.padilla@undp.org

**ANNEX A: PROJECT RESULTS FRAMEWORK** (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

<b>This project will contribute to achieving the following Country Programme Outcome as defined in UNDAF:</b> Improved national, provincial and community preparedness and responsiveness to climate change and disaster risks and sustainable management of natural resources					
<b>UNDAF Outcome Indicators:</b> 1.1.1 – Strengthened capacity to integrate and implement policies/strategies for environmental sustainability, disaster risk reduction/management and climate change adaptation and mitigation at national level 1.1.3 – Strengthened national capacity for effective management of natural and water resources, renewable energy, waste, land and land rehabilitation that promote good agricultural practices for conservation of the environment and biodiversity.					
<b>Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one): 3. Promote climate change adaptation</b>					
<b>Applicable GEF Strategic Objective and Program:</b> CCA-1: ‘Reduce vulnerability to the adverse impacts of climate change, including variability, at local, national, regional and global levels’ CCA-2: ‘Increase adaptive capacity to respond to the impacts of climate change, including variability, at local, national, regional and global levels’ CCA-3: ‘Promote transfer and adoption of adaptation technology’					
<b>Applicable GEF Expected Outcomes:</b> Outcome 1.1: Mainstreamed adaptation in broader development frameworks at country level and in targeted vulnerable areas Outcome 1.2: Reduced vulnerability in development sectors Outcome 2.1: Increased knowledge and understanding of climate vulnerability and change – induced risks at country level and in targeted vulnerable areas Outcome 2.2: Strengthened adaptive capacity to reduce risks to climate-induced economic losses Outcome 2.3: Strengthened awareness and ownership adaptation and climate risk reduction processes at local level Outcome 3.1: Successful demonstration, deployment and transfer of relevant adaptation technology in targeted areas					
<b>Applicable GEF Outcome Indicators:</b> Outcome 1.1: Outcome Indicator 1.1.1: Adaptation actions implemented in national/sub-regional development frameworks (no. and type) Outcome 1.2: Outcome Indicator 1.2.3 Number of additional people provided with access to safe water supply and basic sanitation services given existing and projected climate change (disaggregated by gender) Output 1.2.1: Output Indicator 1.2.1.4: Sustainable drinking water management practices introduced to increase access to clean drinking water (type and level) Examples: Tube wells • Rainwater harvesting • Purification • Water storage • Other Outcome 2.1: Output Indicator 2.1.1.2: Risk and vulnerability assessments conducted and updated Outcome 2.2: Output Indicator 2.2.2.1: % of population covered by climate change risk measures (disaggregated by gender) Outcome 2.3: Outcome Indicator 2.3.1: % of targeted population awareness of predicted adverse impacts of climate change and appropriate responses (Score) – Disaggregated by gender. The score ranges from 1 to 3 and below are the explanations of the rankings based on survey results - 1. No awareness level (<50% correct) 2. Moderate awareness level (50- 75%) 3. high awareness level (>75% correct) Outcome 3.1: Outcome Indicator 3.1.1: % of targeted groups adopting adaptation technologies by technology type (disaggregated by gender)					
	<b>Indicator</b>	<b>Baseline</b>	<b>Targets End of Project</b>	<b>Source of verification</b>	<b>Risks and Assumptions</b>
<b>Project Objective</b> <sup>27</sup> To improve the resilience of	• At least 6 Water Sector Climate Adaptation Response Plans developed and	• Water and adaptation responses are not integrated into national policy or on the ground actions	• Water Sector Climate Change Adaptation Response Plans inform and guide policy implementation for multi-sector adaptation response	• Assessments of National Water and Sanitation Policy and Implementation Plan	<b>Assumptions</b> • Willingness amongst stakeholders and projects to share climate related information

<sup>27</sup> Objective (Atlas output) monitored quarterly ERBM and annually in APR/PIR

<p>water resources to the impacts of climate change in order to improve health, sanitation and quality of life, and sustain livelihoods in targeted vulnerable areas</p>	<p>implemented (aligned with AMAT 1.1, 2.1, &amp; 2.3)</p> <ul style="list-style-type: none"> <li>Resilient and safe water supplies to climate change impacts for 50,000 people and improvised sanitation for 25,000 people (disaggregated by gender) (aligned with AMAT 3.1)</li> </ul>	<ul style="list-style-type: none"> <li>Rural water supply and sanitation is focused on service delivery and not medium to long term sustainability of water resources and supplies</li> <li>Little attention is paid to protection / restoration of natural infrastructure capturing, storing, cleaning and conveying water</li> <li>NAPA is implemented mainly through development partner projects – no national learning mechanism in place</li> </ul>	<p>investments</p> <ul style="list-style-type: none"> <li>At least 6 sites across 6 Provinces have resilient water supply options and improved sanitation with sustainable financing and operation and maintenance plans for over 12,000 people (at least 5,760 women)</li> <li>At pilot sites, watersheds, including groundwater are better managed and protected (confirmed by water quality testing and flow/yield measurements)</li> <li>Multi-sectoral understanding and integrated use of climate information, including budget allocations</li> </ul>	<ul style="list-style-type: none"> <li>Mid-term and terminal evaluation reports</li> <li>Annual multi-sector policies and plans at the national levels to check whether they include water adaptation solutions with associated budgets</li> <li>Assessment of whether and how watershed, including groundwater, are better managed and protected</li> <li>Assessment of the quality and effectiveness of operation and maintenance plans</li> <li>Questionnaires (repeated and modified for survey of key informants, women, to assess understanding and use of climate information)</li> <li>Project reports and technical outputs</li> <li>Meeting minutes, outputs from National Water and Adaptation Forum</li> <li>Water quality testing in pilot and one non-pilot (control) site</li> </ul>	<ul style="list-style-type: none"> <li>Pilot Site Communities and Stakeholders remain willing to be involved in the project</li> <li>Adequate support from all the Provincial Administrations to implement project activities (sometimes jointly)</li> <li>Climate and natural disasters do not hinder project activities and logistics</li> <li>National Security situation remains stable and improving</li> <li>Rural WASH and Climate Change Adaptation remain a priority for Government</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>Weather impedes travel to some Provinces</li> <li>Insufficient ownership and collaboration with Pilot Site communities and other beneficiaries</li> <li>National economic situation is not able to allocate adaptation related components in budgets at end of project</li> <li>Sectoral uptake of water adaptation planning is low</li> </ul>
<p><b>Outcome 1<sup>28</sup></b> Water Sector – Climate Change Adaptation Response plans formulated, integrated and mainstreamed in water sector-related and in broader policy and</p>	<ul style="list-style-type: none"> <li>Vulnerability assessment and Climate Change Adaptation Response Plans for the Water Sector inform the development of (i) SIG Provincial Plans incorporating water adaptation, (ii) budget allocations, and (iii) institutional capacity development for</li> </ul>	<ul style="list-style-type: none"> <li>No adaptation plans or adaptation guidance exists for the water sector at the National or Provincial levels (including both for water resources and water supply, sanitation and hygiene)</li> <li>Sporadic and anecdotal data and lessons on adaptation at Provincial level</li> <li>Lack of downscaled details from national assessments</li> </ul>	<ul style="list-style-type: none"> <li>At least 6 Water Sector Climate Change Adaptation Response Plans at Pilot Site level developed</li> <li>At least 6 Provincial Water Adaptation Plans developed and budgets allocated</li> <li>At least 6 additional Water Sector Climate Change Adaptation Response Plans at replication sites developed (1 per Province)</li> </ul>	<ul style="list-style-type: none"> <li>Project Annual Progress Reports</li> <li>Water Adaptation Response Plans</li> <li>Water Vulnerability Framework and Assessments</li> <li>Guidance documents on Water Vulnerability across Provinces</li> <li>Provincial Water Adaptation Plans and</li> </ul>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>Willingness amongst stakeholders and projects to share climate related information</li> <li>Pilot Site Communities and Stakeholders remain willing to be involved in the project</li> <li>Adequate support from all the Provincial Administrations to implement project activities (sometimes jointly)</li> <li>Climate and natural disasters do</li> </ul>

<sup>28</sup> All outcomes monitored annually in the APR/PIR. It is highly recommended not to have more than 4 outcomes.



development frameworks	adaptation (aligned with AMAT 1.1, 2.1)	across a wide area	<ul style="list-style-type: none"> <li>• Training of relevant Provincial and National Staff in the Water Vulnerability Framework and Adaptation Response Plan</li> <li>• Provincial ‘package’ of relevant information to guide adaptation investments for the water sector</li> <li>• Replication sites mirror the process at pilot sites – implemented by SIG</li> </ul>	Provincial budget allocations <ul style="list-style-type: none"> <li>• Pre and post workshops/capacity building training surveys/questionnaires</li> <li>• Training Packages</li> <li>• Mid-Term and Terminal Evaluation reports</li> </ul>	not hinder project activities and logistics <ul style="list-style-type: none"> <li>• National Security situation remains stable and improving</li> </ul> <b>Risks</b> <ul style="list-style-type: none"> <li>• Weather impedes travel to some Provinces</li> <li>• Insufficient ownership and collaboration with Pilot Site communities and other beneficiaries</li> <li>• Capacity at Provincial level is unable to adequately perform tasks (lack of service providers)</li> <li>• Provincial Administration are unable to secure budget allocations at the end of the project to improve adaptation responses</li> </ul>
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**Outputs to deliver Outcome 1:**

- 1.1. Vulnerability assessments of water supplies (in terms of quantity and quality) to climate change in targeted critical areas refined or formulated
- 1.2. WS-CCAR plans prepared in the context of IWRM and in line with and integrated into existing local and national policy and development planning processes
- 1.3. Government budgets allocated to support implementation of key components of WS-CCAR plans

<b>Outcome 2</b> Increased reliability and improved quality of water supply in targeted areas	<ul style="list-style-type: none"> <li>• Number of people provided with access to safe water supply and basic sanitation services given existing and projected climate change (AMAT 1.2)</li> <li>• No. of accurate warnings disseminated resulting appropriate adaptive responses at community and household levels</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Tuwo:</b> 100% of community have no water &gt;5 times per annum.</li> <li>• <b>Gizo:</b> reticulated system operates at 70% supply, with a further 70% leakage rate.</li> <li>• <b>Manaaoba:</b> 90% of community has no RW supply &gt;5 times per annum.</li> <li>• <b>Taro:</b> 73% of community have no access to a toilet and no alternative safe water supply than existing RW tank system covering only 70% of community (empty &gt;5 times per annum.)</li> <li>• <b>Santa Catalina:</b> 94% of community have inadequate roofing to capture water, with 79% of tanks empty &gt;5</li> </ul>	<ul style="list-style-type: none"> <li>• Increased Water Storage at six sites provides a diversified approach to capturing and storing freshwater safely through island appropriate technologies (100% of communities have regular annual supply)</li> <li>• Strategic freshwater reserves are rehabilitated and protected (where necessary) for pilot site locations (at least 1 site)</li> <li>• Construction of appropriate sanitation technologies (e.g., composting toilets) at pilot sites (at least 4) to protect groundwater and other sources of water supply</li> <li>• Trial sites for sanitation options – working with local and national campaign on ‘sanitation futures’ (&gt;6 campaigns) to facilitate adoption and maintenance of sanitation</li> </ul>	<ul style="list-style-type: none"> <li>• Technical pilot site reports: rainwater harvesting surveys, sanitation surveys, revised building codes, feasibility studies (for new water sources or system rehabilitation)</li> <li>• Operation and maintenance manuals</li> <li>• Health and sanitation statistics by Government and/or international/research institutions</li> <li>• Protocols and appropriate Ordinances for sustainable use of water sources, especially groundwater</li> <li>• Water quality testing in pilot and one non-pilot</li> </ul>	<b>Assumptions</b> <ul style="list-style-type: none"> <li>• Willingness amongst stakeholders and projects to share climate related information</li> <li>• Pilot Site Communities and Stakeholders remain willing to be involved in the project</li> <li>• Adequate support from all the Provincial Administrations to implement project activities (sometimes jointly)</li> <li>• Climate and natural disasters do not hinder project activities and logistics</li> <li>• National Security situation remains stable and improving</li> </ul> <b>Risks</b> <ul style="list-style-type: none"> <li>• Weather impedes travel to some Provinces</li> </ul>
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		<p>times per annum.</p> <ul style="list-style-type: none"> <li>• <b>Tiggoa:</b> 55% of the community have no water supply &gt;5 times per annum.</li> </ul>	<p>technologies</p> <ul style="list-style-type: none"> <li>• Clean up and protection of key groundwater recharge areas (i.e. Taro wetland – for &gt;3 sties)</li> <li>• Community based Early Warning ‘Systems’ (CBEWS) in place at more than 6 sites</li> </ul>	<p>(control) site</p> <ul style="list-style-type: none"> <li>• Mock EWS testing/drill in pilot and one non-pilot (control) site</li> <li>• Community surveys/interview of informants on risk perception in pilot and one non-pilot (control) site</li> <li>• Mid-Term and Terminal Evaluation reports</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient ownership and collaboration with Pilot Site communities and other beneficiaries</li> <li>• Capacity at Provincial level is unable to adequately perform tasks (lack of service providers)</li> <li>• Provincial Administration are unable to secure budget allocations at the end of the project to improve adaptation responses</li> <li>• Inappropriate use of additional sanitation facilities intensifies point source pollution of fresh and marine waters</li> </ul>
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**Outputs to deliver Outcome 2:**

2.1. Community-level WS-CCA soft and concrete measures implemented to improve sanitation and water supply in times of scarcity, that may include, but not limited to: diversification of water sources; protection and restoration of ecosystems that protect critical water resources; improvements in water-use efficiency and overall demand-side management; use of innovative instruments; building on traditional knowledge; protection of freshwater lens through better sanitation practices in small islands (e.g., composting toilets) (in about 6 sites)

2.2. Community-based Climate Early Warning and Disaster Preparedness Information System tailored for water resources management developed and implemented in targeted areas

<p><b>Outcome 3</b> Investments in cost-effective and adaptive water management interventions and technology transfer</p>	<ul style="list-style-type: none"> <li>• No. of pilot sites adopting cost-effective and adaptive water management technologies based on community driven Water and Adaptation Response Projects at &gt; 20 sites aligned with (AMAT 3.1)</li> <li>• National Water investments include adaptation interventions to maintain medium to long term sustainability and provide resilience to community water needs and requirements (aligned with AMAT 1.1 &amp; 3.1)</li> </ul>	<ul style="list-style-type: none"> <li>• No current direct access to funding for community projects focusing on adaptation and water risks</li> <li>• Development partner and national interventions focused on rural WASH provision do not include adaptation response in project delivery- investments or in climate proofing projects</li> <li>• Only 1 publicly owned portable water filter/desalination unit exists for the entire country</li> </ul>	<ul style="list-style-type: none"> <li>• At least 20 community driven, designed and developed Water and Adaptation Response Projects (aligned with co-financer interventions)</li> <li>• National Water investments to adaptation investments doubled by fourth year of project implementation</li> <li>• Appropriate water supply equipment successfully procured and delivered to pilot sites and key disaster stakeholders such as NDMO for enhanced preparation and response to water scarcity</li> <li>• Maintenance and operational guidelines developed and budgeted at the provincial and/or community levels</li> </ul>	<ul style="list-style-type: none"> <li>• Quarterly reports (both visual and in writing) from participating communities and provinces</li> <li>• Mid-Term and Terminal Evaluation reports</li> <li>• Project site Operation and Maintenance plans, including at co-financer project sites</li> <li>• Sector budget reporting</li> <li>• Minutes of NCWG, WASH group, and NIWRMCC, NDMOC</li> <li>• Water supply equipment for emergencies successfully in Honiara and tested</li> <li>• Assessment and system testing of NDMO’s state-of-the-art water supply technology</li> <li>• Training courses in</li> </ul>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Willingness amongst stakeholders and projects to share climate related information</li> <li>• Communities and Stakeholders remain willing to be involved in the project</li> <li>• Adequate support from all the Provincial Administrations to implement project activities (sometimes jointly)</li> <li>• Climate and natural disasters do not hinder project activities and logistics</li> <li>• National Security situation remains stable and improving</li> <li>• Volunteers are available</li> <li>• Communications specialists and journalists are interested in working on the project</li> </ul> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>• Weather impedes travel to some</li> </ul>
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				<p>disaster relief equipment use</p> <ul style="list-style-type: none"> <li>• Communication an learning products and outputs (from print to TV)</li> </ul>	<p>Provinces</p> <ul style="list-style-type: none"> <li>• Insufficient ownership and collaboration with communities and other beneficiaries</li> <li>• Capacity at Provincial level is unable to adequately perform tasks (lack of service providers)</li> <li>• Provincial Administration are unable to secure budget allocations at the end of the project to improve adaptation responses</li> <li>• Inappropriate use of additional sanitation facilities intensifies point source pollution of fresh and marine waters</li> </ul>
<p>• <b>Outputs to deliver Outcome 3:</b></p> <p>3.1. Strategic investments in water infrastructure in target areas, including but not limited to: new household and communal water storage systems and infrastructure; provision of up to 4 portable water filtration and/or desalination systems for sharing across communities in times of extreme water scarcity.</p> <p>3.2. Compilation of best practices on applicable technologies for dissemination and replication by project partners with support from the project</p>					
<p><b>Outcome 4</b> Improved governance and knowledge management for Climate Change Adaptation in the water sector at the local and national levels</p>	<ul style="list-style-type: none"> <li>• An annual National Water Forum where key stakeholders generate and exchange knowledge generation, and develop policies that facilitate climate change mainstreaming in the water sector</li> <li>• Number of awareness materials on climate change risks and vulnerability of water sector, and appropriate adaptation and response measures produced through the SIWSAP project with national partners providing cross-sector adaptation relevant information (aligned with AMAT 2.1 &amp; 2.3)</li> </ul>	<ul style="list-style-type: none"> <li>• No specific guidelines exist for water resources, supply, and sanitation relative to climate change impacts and how to plan for these</li> <li>• No national forum exists for sharing, discussing, and learning from adaptation and water management programmes</li> <li>• Rural sanitation coverage is at best only 18% of the population. Composting toilets are not well understood, and sanitation is not considered a viable option for rural communities</li> <li>• Until recently, very little national advocacy for sanitation or understanding of climate change impacts</li> <li>• Existing hydrological monitoring systems is not adequate for existing climate</li> </ul>	<ul style="list-style-type: none"> <li>• 1 academic/scientific and/or policy publication on the climate change impacts on the water resources of the Solomon Islands</li> <li>• Guidelines produced for climate resilient water supply and sanitation development in vulnerable areas of the Solomon Islands</li> <li>• A total of 3 Annual National Water and Adaptation Forum are held (in years 2, 3, &amp; 4 of project implementation)</li> <li>• Improvement in, and expansion of current national hydrological monitoring network with 4 more sites installed</li> <li>• Sanitation and Adaptation Partnership with IWRM participating countries (i.e. Tuvalu) in place</li> <li>• Designed and Implemented National Sanitation Campaign with partners reach more than 20% of national population.</li> <li>• Peer-to-Peer Learning Network</li> </ul>	<ul style="list-style-type: none"> <li>• National Water and Adaptation Forum Report and Outputs</li> <li>• Scientific and/or policy reports and publication</li> <li>• Assessment of guidelines on climate resilient water supply and sanitation development</li> <li>• Data from new hydrological monitoring sites</li> <li>• Survey of teachers/students on National Diploma curriculum</li> <li>• Survey/assessment on use of composting toilets and other new improved sanitation practices through site reporting</li> <li>• Survey/ dissemination records of communication outputs</li> </ul>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Willingness amongst stakeholders and projects to share climate related information and to support the National Water and Adaptation Forum and Sanitation Campaign</li> <li>• Willingness of IWRM participating countries (i.e. Tuvalu) to join the Partnership</li> <li>• Adequate support from all the Provincial Administrations to implement project activities (sometimes jointly)</li> <li>• National University has capacity and willingness to actively support the development of a Diploma</li> <li>• Climate and natural disasters do not hinder project activities and logistics</li> <li>• National Security situation remains stable and improving</li> </ul> <p><b>Risks</b></p>

		<p>variability, or for predicted (and often very localized) climate changes</p>	<p>established across Pilot and Replication Sites (Outcome 2)</p> <ul style="list-style-type: none"> <li>• National Diploma on Water and Adaptation with Solomon Islands National University in place</li> <li>• At least two creative and/or audiovisual products are produced utilizing participatory communications approaches to communicate, train, influence and provide learning from the project (participatory video, video diaries, theatre, music, etc)</li> </ul>	<ul style="list-style-type: none"> <li>• Mid-Term and Terminal Evaluation reports</li> <li>• Assessment of increased no. of people with access to drinking water through SIG</li> </ul>	<ul style="list-style-type: none"> <li>• Weather impedes travel to some Provinces</li> <li>• Insufficient ownership and collaboration with Pilot Site communities and other beneficiaries</li> <li>• Capacity at Provincial level is unable to adequately perform tasks (lack of service providers)</li> <li>• Provincial Administration are unable to secure budget allocations at the end of the project to improve adaptation responses</li> </ul>
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Outputs to deliver Outcome 4:

4.1. Overarching policy and legislation for the water sector that integrates CCA components in IWRM plans drafted and advocated, including guidelines for climate resilient water supply development in vulnerable areas

4.2. Institutional and community capacities strengthened toward water-sector CCA formulation, implementation and monitoring at the national and local levels

4.3. Multi-media knowledge products on CC, CCA, IWRM, lessons learned and best practices developed and disseminated extensively to communities, schools and the general population and through ALM

**ANNEX B: RESPONSES TO PROJECT REVIEWS** (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

GEF Secretariat Review Question	GEF Secretariat Recommended Action by CEO Endorsement	Response
7. Is the project aligned with the focal /multifocal areas/ LDCF/SCCF/NPIF results framework?	Not entirely. Some expected outputs are not aligned with the CCA Results Framework. Please refer to Section 14.	As per Section 14, Outputs have been aligned by: - Removing Outputs 1.2.1 and 1.2.2 - Consolidating Outputs in Components 1 and 3
8. Are the relevant GEF 5 focal/ multifocal areas/LDCF/SCCF/NPIF objectives identified?	Not clearly. The project identifies Objective CCA-1 only. However, some of the Outcomes in Component 1 and Component 3 fit Objective CCA-2. Namely: Expected Outputs 1.1.1, 3.1.2, 3.1.3, and 3.1.4. Likewise, some of the activities listed under Component 2 could potentially support objective CCA-3, including technologies for effective water catchment and storage demonstration and replication, and use of water filtration systems. Recommended Action: please include objective CCA-2 in Table A. Also, please consider including objective CCA-3. April 23, 2012: Objectives CCA-2 and CCA-3 have been included in the FA Strategy Framework.	Objectives CCA-2 and CCA-3 have been included in the FA Strategy Framework.
11. Is (are) the baseline project(s), including problem (s) that the baseline project(s) seek/s to address, sufficiently described and based on sound data and assumptions?	Not clearly. The proposal lists a number of interventions as "baselines", however some of these are not sufficiently described and/or cannot be accounted for as baseline: a) Uncoordinated donor support, listed under Component 1 cannot be accounted as baseline, as it is not a development activity upon which the adaptation interventions can be built on. b) The baseline referring to SIWA under Component 2 is not sufficiently described. c) The proposal states a UNDP/GEF project on IWRM. GEF-funded projects may not work as baseline for LDCF-funded projects. d) Further information is needed on water sanitation projects by Australian government and the Red Cross program, such as total investment amount. The EU-funded "Rural Water and	Pilot sites have been indicated in the Project Document as well as alignment of pilot sites to AudAid and EU projects have also been described within Project Document Output 2.1.

	<p>Sanitation Improvement initiative" can be accounted as a solid baseline for this proposal, depending on whether it targets the same pilot sites as this proposal.</p> <p>Recommended Actions: Please clarify the areas of intervention for the EU-funded project.</p> <p>Furthermore, if the projects listed above, in this Section, are to be considered baselines, please describe further: How much money is invested in these initiatives? How many beneficiaries do they target? Which are the pilot sites? For how long have these initiatives been implemented? April 23, 2012: From the proposal, it would appear that the RWSS programme, consisting of two projects on rural WatSan, and jointly funded by the EU and Aus Aid, will serve as baseline for the investment component of the project (component 2). The EU-funded project is expected to start implementation in 2013; the AusAid initiative, started in 2010. However, it is important that the pilot sites for both interventions (EU and AusAid-funded activities) are the same as the pilot sites of the proposed project.</p> <p>Recommended Action: By CEO Endorsement, please state the pilot sites for the proposed project, and demonstrate their correspondence to the areas of intervention of the baseline project, RWSS.</p>	
<p>13. Are the activities that will be financed using GEF/LDCF/SCCF funding based on incremental/additional reasoning?</p>	<p>Not clearly. Please see Section 11 on the clarification of potential baseline projects for this proposal. Without sufficiently described baselines, it is difficult to justify additional cost principle. April 23, 2012: Yes, the EU- and AusAID "funded projects will be complemented with the inclusion of climate change adaptation measures to make the basic water supply and sanitation projects resilient to the impacts of climate change. The SIWSAP project will build on the baseline project "Rural Water and Sanitation Improvement Initiative" by integrating CC considerations in significant</p>	<p>The EU- and AusAID "funded projects will be complemented with the inclusion of climate change adaptation measures to make the basic water supply and sanitation projects resilient to the impacts of climate change. The SIWSAP project will build on the baseline project "Rural Water and Sanitation Improvement Initiative" by integrating CC considerations in significant ongoing and planned water sector projects that are primarily developmental in nature.</p>

	ongoing and planned water sector projects that are primarily developmental in nature.	
14. Is the project framework sound and sufficiently clear?	<p>No. Activities listed as Outputs 1.2.1 and 1.2.2 are not adaptation Outputs. It is not clear if these activities are budgeted under Component 1. LDCF cannot finance investment dialogues and meetings to seek additional funding for this project. Some of the Expected Outputs under Component 1 and 3 are redundant and could be consolidated: Output 1.1.2 and 1.1.3 and 3.1.1; as well as 3.1.3 and 3.1.4. Expected Output 2.1.1 specifically mentions "protection and restoration of ecosystems that protect critical water resources". These activities may need to be done under "business-as-usual" initiatives, if other pressures on these ecosystems exist and are not predominantly climatic in nature. Such activities should focus on managing other pressures on these ecosystems, whereas managing impacts of climatic stress can be financed under the LDCF.</p> <p>Recommended Action: Please remove Outputs 1.2.1 and 1.2.2. Please remove redundant Outputs or consolidate as describe above. Consider reducing the requested budget for each component as redundant outputs are consolidated. Please describe the adaptation benefits of protecting and restoring ecosystems, i.e. given the prospect of climate change and variability, as it is included under Output 2.1.1., as well as explaining why this method is being selected to improve sanitation and water supply, in the context of climate change.</p> <p>April 23, 2012: Outputs 1.2.1 and 1.2.2 have been removed. Outputs in Components 1 and 3 have now been consolidated. The restoration activities in Output 2.1.1 are explained: restoration and protection of watersheds is expected to contribute to the conservation of the limited</p>	<p>As per Section 14, Outputs have been alinged by:</p> <ul style="list-style-type: none"> <li>- Removing Outputs 1.2.1 and 1.2.2</li> <li>- Consolidating Outputs in Components 1 and 3</li> </ul>

	<p>freshwater lens, as the primary source of potable water; possibly reducing variability in water supply during droughts.</p> <p>Outcome 2.2 has been added, to contribute to Objective CC-A 3, and has increased the grant amount requested in Component 2, by \$1,758,000. Co-financing for the component has increased as well (by \$7 M), and this component is now labeled "INV" as opposed to "TA". This Outcome includes outputs on water and sanitation infrastructure investments and, according to Section B.2 in the proposal, proven technologies will be demonstrated in communities covered by the project through a sequential implementation, particularly of infrastructure investments.</p>	
15. Are the applied methodology and assumptions for the description of the incremental/additional benefits sound and appropriate?	Not clearly. Please refer to previous point on Output 2.1.1, in Section 14. April 23, 2012: This is cleared. See Section 14.	This comment has been addressed
18. Does the project take into account potential major risks, including the consequences of climate change and provides sufficient risk mitigation measures? (i.e., climate resilience)	Not entirely. Poor coordination among project partners is a high risk in the project as it currently stands. Recommended Action: please identify coordination amongst project partners to be a high risk, and identify solid mitigation measures to respond. April 23, 2012: The MECDM is undergoing discussions for a CC Working Group initiative to strengthen partnerships. This has been proposed as a mitigation measure for the risk of weak coordination among partners.	The MECDM is undergoing discussions for a CC Working Group initiative to strengthen partnerships. This has been proposed as a mitigation measure for the risk of weak coordination among partners.
19. Is the project consistent and properly coordinated with other related initiatives in the country or in the region?	Not clearly. The proposal does not mention the current project being developed by the World Bank which is also requesting LDCF resources. Other initiatives by other MFIs are also under preparation. Coordination with these agencies is not discussed in this proposal. This discussion is critical for further development of this project. Further clarification is also needed to ensure that the following initiatives do not duplicate efforts	Coordination with WB and ADB initiatives is explained. Coordination with other activities is also clear.



	<p>of the current proposal and/or explain in more detail how this proposal will benefit from and/or incorporate lessons learned in such initiatives:</p> <ol style="list-style-type: none"> <li>1. Pacific Integrated Water Management project.</li> <li>2. Provincial Government Strengthening Project</li> <li>3. Constituency development funds (especially since these Funds aim to scale up IWRM and CCA)</li> <li>4. Solomon Islands Red Cross Health and Sanitation Program</li> </ol> <p>The SEMRICC (UNDP) project is not mentioned in this section. Clarification on coordination with this initiative, to avoid overlap of activities is needed. Recommended action: please provide clarification and more information on coordination efforts as requested in this section. April 23, 2012: Coordination with WB and ADB initiatives is explained. Coordination with other activities is also clear.</p>	
<p>20. Is the project implementation/ execution arrangement adequate?</p>	<p>Not entirely. There is very little mention of execution arrangements as this project is in very early stages of preparation. However, coordination with other activities in the country is not clear in some cases. See Section 19. Recommended action: please include a section on expected execution arrangements. April 23, 2012: This is cleared. An execution arrangements section has been included. A Project Steering Committee composed of key government and non-government partners, and UNDP will be at the core of the organizational scheme.</p>	<p>This comment has been addressed.</p>
<p>24. Is the funding and co-financing per objective appropriate and adequate to achieve the expected outcomes and outputs?</p>	<p>Not entirely. Components 1 and 3 include Outputs that are either redundant or not aligned with the CCA RBM and therefore should be removed and/or consolidated. (See Section 14). In this regard, the funding per Component should be reduced. Funding per Objective also needs clarification, as the project potentially addresses CCA-2 and CCA-3 and therefore the budget in Table A needs to be</p>	<p>Total co-financing for the project is \$ 43,622,462, which has increased from proposed co-financing during PIF (estimated at \$40,255,000).</p>

	<p>revisited. Recommended action: please revisit funding requested per Component, as well as funding requested per Objective (Table A). April 23, 2012: Co-financing has increased by \$7M for Component 2, which is now an "Investment" component. This Component now supports CCA-3 and includes one more Outcome and 2 Outputs. The budget in table A has been adjusted.</p>	
<p>26. Is the co-financing amount that the Agency is bringing to the project in line with its role?</p>	<p>Not clear. Please note that LDCF projects should be co-financed by a baseline intervention. The UNDP SEMRICC project (listed in the proposal as UNDP's co-financing) should be discussed under Section B.6 in which discussion of "coordination with other activities" is stated.</p> <p>Recommended Action: Please clarify in section B.6 how the proposed project will coordinate with SEMRICC, in order to avoid duplication of efforts and overlapping of activities. Please state a different UNDP co-financing source coming from a baseline initiative.</p> <p>April 23, 2012: This is cleared. Most of the grant co-financing comes from the baseline project "RWSS" funded by EU and AusAID. UNDP is only providing \$1.7 million from the SEMRICC project.</p>	<p>This comment has been cleared.</p>
<p><b>United States comments on the PIF</b></p>		<p><b>Response</b></p>
<p><input type="checkbox"/> We assume, and would like the Agency to confirm, as the information is not explicitly provided in the PIF, that:</p> <p>The vulnerability assessments will include an analysis of current exposure to climate shocks and stresses as well as model-based analysis of future climate impacts in addition to an understanding of the vulnerability of</p>		<p>The vulnerability assessment will include an analysis of current exposure to climate shocks and stresses as well as some level of model and/or scenario-based analysis of future climate impacts so that the assessment, as well as the Water Sector Climate Change Adaptation plans that the vulnerability assessments will feed into, are climate-proofed.</p> <p>In the Project Document, we have proposed to adopt existing tools such as CRiSTAL, CEDRA, VCA (Red Cross) to the context of the project pilot sites.</p>

<p>individuals, communities and water-related plans, projects and policies;</p>		
<p>Adaptation strategies and measures will be designed and implemented based on this information and measures will be appropriately targeted, depending on exposure to climate variation, which is primarily a function of geography (whether on the coasts or in the highlands of the Solomon Islands) and the degree to which water sector plans and projects, as well as targeted communities, in the baseline project are sensitive to climate stresses;</p>		<p>As mentioned above, the vulnerability assessments that take into consideration the existing and future climate impacts will serve as the bases of the provincial and community level Water Sector Climate Change Adaptation plans. Furthermore, lessons and information generated through the local level planning process will also inform and catalyze climate change mainstreaming into national development policies.</p>
<p>The project will leverage climate information services to help decision-makers make more informed decisions, which will help baseline projects and targeted communities effectively adjust to climate change, including climate variability and extremes, and therefore reduce the risk of potential loss and damage associated with the adverse effects of climate change; and</p>		<p>Project Document Outcome 2 Output 2.2. focuses on establishing a Community-based Climate Early Warning (EWS) and Disaster Preparedness Information System tailored for water resources management. Climate information regarding rainfall and dry spells will be communicated through a community-based EWS so that people in the pilot sites may adjust their water consumption behaviors and methods accordingly.</p>
<p>The baseline projects will deal with strengthening institutional capacity, broadly speaking, in order to address the governance-related barriers identified in Section B.1, while the LDCF-funded project will be targeted toward building <i>technical adaptation</i> capacity of relevant institutions. □</p>		<p>Ongoing baseline projects, particularly the Provincial Governance Strengthening Project (PGSP), implemented by UNDP and funded by UNDP together with other donors (UNCDF, EU and AusAID), is focused on strengthening the capacity of Provincial Governments to plan and implement development programmes as well as in administration of provincial affairs. Projects such as this will contribute the SIWSAP in overcoming governance-related barriers identified as</p>

<p>We suggest that the Agency include relevant regional institutions in section B.5, such as SPC (which recently absorbed SOPAC) and SPREP, as well as relevant bilateral development partners, such as USAID and AusAID.</p>		<p>risks.</p> <p>In CEO Endorsement Form B1, we have added SPC/SOPAC, AusAID, EU, and USAID with their expected roles and nature of partnership with the SIWSAP project.</p>
<p>We also request that the Agency strongly consider including programs and projects that address deforestation in Section B.6, as deforestation in the Solomon Islands compounds local vulnerability to extreme hydrological events.</p>		<p>Interventions supported in Gizo and Taro provinces relate to utilizing ecosystems-based approach to enhancing resilience to hydrological events. The watershed restoration proposed to take place and Gizo and Taro are already quite forested area. However, logging is a key concern and therefore training will be provided on conservation and management.</p> <p>Furthermore, in Gizo, a natural spring that serves as a small-scale reservoir will be rehabilitated. Again, the reservoir is located in a forested area, but some small scale tree planting will take place.</p> <p>As an effort to address issues of deforestation more comprehensively, the UNREDD programme is currently enabling the Solomon Islands government to address the drivers of deforestation by protecting natural forest and ecosystems through development of National REDD+ Roadmap, guidelines for safeguards and stakeholder engagement that focus on the broader agenda of sustainable development, including ecosystem-based approaches to water resource management in the context of Solomon Islands.</p> <p>Furthermore, a project focusing on <i>Integrated forest management in the Solomon Islands</i> is currently being developed by FAO in partnership with the Ministry of Environment, Climate Change, Disaster Management and Meteorology, Ministry of Forest and Research, and Ministry of Agriculture and Livestock to be funded by GEF. As forest management relates closely with enhancing quality and quantity of water</p>

		resources, SIWSAP will work closely with the development and implementation of this project to ensure synergies and alignment at both national levels and in the pilot sites.
<p>Taken together, three of the risks identified in Section B.4 – limited capacity of government to implement and manage a large complex project, the customary land tenure structure, and concern regarding buy-in from communities – create a picture of much larger concern about the capacity of community stakeholders to absorb different messages from the multiple program partners, including provincial government. In developing the proposal in the next stage, the Agency should strongly consider ways in which it can strengthen its efforts to overcome these barriers</p>		<p>In order to address the risk of limited capacity of government to implement and manage large complex projects, we are proposing to establish a project management team with sufficient project management and technical capacity as well as deploy project focal points to be placed within provincial offices to provide on-the-ground support to the consultations, designs, and implementation of pilot level activities. Furthermore, through request from the Government of Solomon Island, UNDP Country Office will provide support to the National Implementation of the Project through providing operational and oversight support to the government implementing partner as per a Letter of Agreement that will be signed between the Government of Solomon Island and UNDP.</p> <p>To mitigate the risk of customary land tenure structure, we take the approach of participatory design and consultation for all components of the project, from planning to implementation/rehabilitation of both soft and hard climate-adaptive water management infrastructures. This approach will also contribute to minimizing risk of lack of community buy-in as the Project will ensure that key stakeholders, including women and children, will be engaged from the design to implementation of activities and interventions.</p>
<p>Finally, we look forward to seeing a much more detailed description from the Agency in the next stage of proposal development of how this project takes gender into consideration.</p>		<p>A summary of gender considerations that will be taken into account is included within Project Document II Strategy, 2.1 2.3 Design Principles and Strategic Consideration.</p>



**ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS<sup>29</sup>**

- Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF:			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF/NPIF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Local consultants *	60,000	71,895.00	0
International consultants*	50,000	21,546.00	28,454
Meeting/Consultation Costs	25,000	3,263.00	9,842
Technical Analyses	15,000	0	15,000
Local Costs (\$150,000 for each project site)			
<b>Total</b>	150,000	96,704.00	53,296

\*In addition to the above resources, co-funding from UNDP was allocated as follows:

Local consultants - additional US\$ 33,000

Travel – US\$ 56,000

Meeting/consultation Costs – US\$ 20,000

Technical Analysis – US\$ 15,000

<sup>29</sup> If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.

**ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)**

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/NPIF Trust Fund or to your Agency (and/or revolving fund that will be set up)