

Annex VI (a) - Environmental and Social Impact Assessment

GREEN CLIMATE FUND FUNDING PROPOSAL

Annex VI (a): Social and Environmental Screening Template

The completed template, which constitutes the Social and Environmental Screening Report, must be included as an annex to the Project Document. Please refer to the <u>Social and Environmental Screening Procedure</u> and <u>Toolkit</u> for guidance on how to answer the 6 questions.

Project Information

P	roject Information					
1.	Project Title	Tuvalu Coastal Adaptation Project				
2.	Project Number	NA NA				
3.	Location (Global/Region/Country)	Tuvalu				

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?

Briefly describe in the space below how the Project mainstreams the human-rights based approach

The project will ensure social equity and equality. The programme will provide the community with improved information to allow them to make decision prior to, during and post events. It will also provide valuable data that will allow for future planning as well as how communities need to adapt their current activities to meet the increasing threat of climate change. With this information, it is highly likely that lives will be saved and it will improve two-way communication mechanisms and inclusion of resilience building projects in the socio-economic planning process. The programme will increase the safety of people and their houses, particularly in high risk, low elevation households which is very common in Tuvalu. More importantly, individuals can feel safer and stay in their homes during events, and therefore this will save lives. Further, the programme will increase community resilience by providing structural engineering standards for coastal protection infrastructure, therefore enhancing the lives of vulnerable groups including those with disabilities, minority groups, youth and the elderly.

Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment

The project does not directly have a focus on gender sensitive planning and implementation, nor does it provide women's empowerment. However, many of the project beneficiaries will be women. Women often bear the brunt of the vagaries of the weather and disrupted livelihoods. By focusing on tailored products that include gender-sensitive adoption strategies, the project will ensure that women are empowered to benefit from improved coastal protection, which will allow them to cope with climate change impacts. Many women will benefit from increased awareness and support on climate change risks and how to incorporate the information in their trades thereby protecting their livelihoods and enhancing adaptive capacities.

Briefly describe in the space below how the Project mainstreams environmental sustainability

The project is expected to have some short term fine scale environmental impacts but significant environmental benefits. Accordingly, the project will ensure risk assessments and hydrodynamic studies and potential acid sulfate soil investigations are undertaken, and results and mitigation measures



integrated into final design. By increasing the areas with coastal protection infrastructure, this will allow for the protection of communities and the coastal zone, the project will yield environmental benefits through strengthened ecosystem resilience, increase biodiversity and improved water quality through reduced sediment movement.

Part B. Identifying and Managing Social and Environmental Risks					
QUESTION 2: What are the Potential Social and Environmental Risks? Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any "Yes" responses). If no risks have been identified in Attachment 1 then note "No Risks Identified" and skip to Question 4 and Select "Low Risk". Questions 5 and 6 not required for Low Risk Projects.	significar environm Note: Respo	gnificance of the potential social and nvironmental risks? Interpolate: Respond to Questions 4 and 5 below before poceeding to Question 6		QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?	
Risk Description	Impact and Probabilit y (1-5)	Significan ce (Low, Moderate, High)	Comments	Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.	
Risk 1: Sediment movement during the installation of coastal protection infrastructure	I = 3 P = 2	Moderate	During the installation of coastal protection infrastructure, it may be necessary to undertake very small scale earth works to level areas where the coastal protection infrastructure will be placed to ensure it has adequate footings. The earth works will move marine sediment that, if not properly contained, may enter important marine habitats.	To ensure that the sediment is not mobilised through current movement that will result in any significant impacts, it will be necessary to prepare an erosion control sediment plan and install silt curtains to restrict sediment movement within the marine environment. Further, any earthworks should be undertaken at low tide to reduce sediment movement. The plan should contain aspects including but not limited to the installation of sediment curtains to reduce sediment movement and the quick placement of footing material. These impacts will be spatially and temporally restricted to construction periods. In the design of coastal structures, appropriate toe protection will be included to prevent scour at the	



				front end of the structure. Beach material will be
				excavated down to solid foundations on either
				substantial beach rock or the reef platform
				(estimated to be 2.0m LAT under the beach) for
	1 4		The second second second	preventing scour.
	I = 1 P = 3	Low	There are a range of small	Significant information about the existing
	P = 3		scale environmental impacts associated with	environment is contacted within the following
			the installation of the	reports:
			coastal protection	a. AECOM (June 2015), Tuvalu Coastal Protection Scope Definition; report prepared for the World
			infrastructure. Potential	Bank;
			impacts include the	b. Japan International Cooperation Agency,
			impacts on the marine	Kokusai Kogyo Co., Ltd and Fisheries
			environment through the	Engineering Co., Ltd (Jan 2011), <i>The Study for</i>
			loss of habitat, changes in	Assessment of Ecosystem, Coastal Erosion and
			hydrodynamic processes,	Protection/Rehabilitation of Damaged Area in
			potential increases in	Tuvalu, report prepared for the Government of
			erosion in locations that	Tuvalu's Ministry of Foreign Affairs,
			may be impacted through	Environment, Trade, Labour and Tourism; and
Risk 2: Impacts on the marine			secondary impacts etc.	c. McCue, J (May 2014), Increasing Resilience of
environment through the				Coastal Areas and Community Settlements to
construction of coastal protection				Climate Change: Coastal Options and
infrastructure				Feasibility Report – Nukufetau and Nanumea,
				report prepared for Sustainable Sea, Australian
				Aid, NAPA Tuvalu, United Nations Development
				Programme and the Government of Tuvalu.
				Prior to final design and site selection of the
				coastal protection infrastructure, a number of
				environmental and social studies should be
				undertaken including:
				Chemical, ecological and physical
				assessments (and associated modelling) that
				consider the adjacent marine ecosystems
				including but not limited to, marine water
				quality within the areas of influence, potential
				contamination from marine sediments that
				may currently be contaminated, disturbance to



				habitats through the placement of infrastructure, noise, and vibration impacts, impact on benthic, planktonic and pelagic biota, and entrainment and entrapment of marine organisms. All these studies should consider spatial and temporal characteristics; 2. Hydrodynamic modelling to ensure the coastal protection infrastructure does not result in the change to coastal processes within natural variables respectively. The study should evaluate various coastal infrastructure types and design.
				To mitigate environmental impacts, it is critical to ensure that the proposed coastal protection infrastructure is away from sensitive habitats and is designed to minimize entrapment and entrainment of marine species although this is unlikely given the types of infrastructure being constructed. Further, the infrastructure should avoid impacts on marine species and specifically important habitats such as coral reefs etc.
				The information from the studies will be used to inform the environmental and social management plan for the project along with providing fine scale information for the design of the coastal protection infrastructure. The plan should ensure it includes water quality monitoring in the short term.
Risk 3: Impacts on the marine and coastal environments from dredging and/or sediment collection	I = 2 P = 2	Low	There are a range of low environmental associated with the dredging of material for the construction of the coastal protection infrastructure. Potential impacts include the impacts on the marine environment through the	It is anticipated that a backhoe dredge will be used to collect sand etc for the coastal protection infrastructure. The benefits of using a backhoe dredge are that they can work in shallow water environments, are easily manoeuvrable, and are able to dredge harder and/or larger sediments (e.g. sand and gravel as are found within the coastal areas of Tuvalu) in comparison to the dredging of fine clays which are usually dredged with a trailing



important habitats such as coral reefs etc.

plan for the project.

The information from the studies will be used to inform the environmental and social management

loss of habitat although benthic invertebrates quickly recolonise disturbed environments and very short term changes in water quality.	suction hopper dredge or cutter suction dredge. These types of dredges have been used consistent in the Pacific for small scale dredging for ports and coastal protection infrastructure projects and have proved to be highly effective both operationally and environmentally. Further, a backhoe dredge has no overflow as a result of only removing sediment and therefore no impacts will be observed other than the removal of the sediment unlike trailing suction hopper dredge or cutter suction dredge which can cause significant turbidity which has impacts on water quality. Prior to site selection for dredging and/or collection of sediment to construct the coastal protection infrastructure, a number of environmental and social studies should be undertaken including: 1. An rapid assessment of proposed locations where dredging and/or sediment collection will take place; and 2. An assessment of existing water quality; marine habitats and species utilization and any important use of this area by species or humans (eg fishing grounds). The studies should consider spatial and temporal characteristics;
	To mitigate environmental impacts, it is critical to ensure that the proposed dredging and/or other sediment collection is away from sensitive habitats and is designed to minimize impacts during dredging. Further, the dredging should avoid impacts on marine species and specifically



Risk 4: Exposure of Acid Sulfate Soils	I = 3 P = 1	Low	Any sediment movement may also expose acid sulfate soils within the mangrove areas. Acid sulfate soils and/or potential acid sulfate soils occur in areas of mangrove (there are no known mangroves in proximity to the project footprint). The earth works will move sediment that, if not properly contained, may enter the marine environment.	There is the very limited potential that acid sulfate soils occur within the project footprints as no mangroves have been previously observed in these locations. It will be necessary to prepare an acid sulfate management plan consistent with international good practice. Prior to any excavation, sediments will be tested for their presence of acid sulfate soils and/or potential acid sulfate soils. If the analysis proves positive, the sediment can be treated by a range of techniques including but not limited to liming the sediment. Reference will be made to appropriate standards and guidelines. Every effort will be made to ensure there is no direct or residual impact following treatment.
Risk 5: Entrainment and impingement/entrapment of marine organisms	I = 2 P = 1	Low	During the construction of the coastal protection infrastructure, marine organisms could be entrainment and impingement/entrapment. This could result in the death of the specific marine organisms.	The construction of coastal protection infrastructure is known to impact on lower order marine organisms including phytoplankton, zooplankton and marine invertebrates. They can also impact on juvenile fishes if place in an inappropriate location. To avoid impacts, the placement of the coastal protection infrastructure will rely on the studies identified above. Further, spotters should be used during construction to mitigate the risk of capture of important species thus totally reducing potential impacts on vertebrate fauna.
Risk 5: Impact on important fishing grounds	I = 2 P = 1	Low	There is the potential, if not managed correctly, that important fishing grounds could be impacted as a result of ill-informed positioning of the coastal protection infrastructure.	An assessment of the location of any important fishing grounds will be undertaken including consultation with local community that may be impacted by either the placement of coastal protection infrastructure. This will ensure the project does not impact any important fishing grounds.
Risk 6: Terrestrial and Marine Noise	I = 2 P = 2	Low	Terrestrial and marine noise including through the use of construction	An assessment of the terrestrial habitat where the coastal protection infrastructure is to be located should consider any sensitive receptors including



			equipment and rock dumping will occur as result of the projects. can impact on local communities and maria and terrestrial fauna us the adjacent area.	This ne	communities. Further, noise shields should be constructed to reduce the potential for noise to reach these communities if an impact occurs. The noise will predominantly relate to the dumping of rock, which will have very limited temporal scales. With respect to the marine environment, the studies that will be undertaken will provide input into the final location of coastal protection infrastructure to ensure underwater noise does not impact marine organisms and sensitive receptors. As above, the noise will predominantly relate to the dumping of rock, which will have very limited temporal scales.
Risk 7: Production of waste	I = 1 P = 1	Low	The waste associated with the construction of the coastal protection infrastructure, particularly if sand bags etc will have a limited impact on the environment is disposed of properly.		All damaged sand bags and any other waste should be managed and placed in an appropriate waste facility. Thus reducing any impact.
	QUESTION 4: What is the overall Project risk of			categorization?	
		Salact one (sa	e <u>SESP</u> for guidance)		Comments
		Jeieer one (see	Low Risk		Comments
	Moderate Risk X				If the appropriate mitigation measures are put in place during the project, the project will have a low risk over the short to medium term impacts.
	High Risk □				
	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?				
	Check all that apply			Comments	
	Principle	1: Human Rig	ghts		The project has no impact on human rights.



Principle 2: Gender Equality and Women's		The project is gender neutral.
Empowerment 1. Biodiversity Conservation and Natural Resource Management	x	The project will have an overall benefit on natural resource management through the reduction in erosion of existing areas and reduce sea flooding through inundation during high/king tides and from storm surge during cyclone events. There is the potential for the project to have fine scale negative impacts on biodiversity through the placement of the coastal protection although the infrastructure will provide a three dimensional habitat in comparison to the existing two dimensional habitat. There is also the potential for small temporal changes in marine water quality when dredging is undertaken. A number of studies are recommended prior to site selection and final design of both the coastal protection infrastructure and also the dredging that will provide guidance to ensure the vast majority of negative impacts are mitigated. There will be a temporal impact through for example, the loss of marine invertebrate biodiversity; changes in water quality; however benthic animals are known to be both resilience and moreover, quickly inhabit new ecosystems.
2. Climate Change Mitigation and Adaptation	x	The project is designed to provide the community with coastal protection infrastructure that will act as a buffer during high/king tides and from storm surge during cyclone events that are exacerbated by climate change and sea level rise.
3. Community Health, Safety and Working Conditions		The project has a positive benefit of increasing the communities' health and safety through improved coastal protection and therefore improving the longevity of peoples' houses, therefore providing valuable resources to both the environment and community.



4. Cultural Heritage	The project has no impact on cultural heritage.
5. Displacement and Resettlement	The project will have no issues of displacement or resettlement.
6. Indigenous Peoples	The project has no impact on indigenous peoples.
7. Pollution Prevention and Resource Efficiency	The project will not result in increased pollution

Final Sign Off

Signature	Date	Description
QA Assessor		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final
		signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.
PAC Chair		UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final
		signature confirms that the SESP was considered as part of the project appraisal and
		considered in recommendations of the PAC.



SESP Attachment 1. Social and Environmental Risk Screening Checklist

Che	cklist Potential Social and Environmental Risks	
Prin	ciples 1: Human Rights	Answer (Yes/No)
1.	Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
2.	Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? 1	No
3.	Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	No
4.	Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	No
5.	Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	No
6.	Is there a risk that rights-holders do not have the capacity to claim their rights?	No
7.	Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
8.	Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Prin	ciple 2: Gender Equality and Women's Empowerment	
1.	Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	No
2.	Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	No
3.	Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	No
4.	Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services?	No

¹ Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.



	ciple 3: Environmental Sustainability: Screening questions regarding onmental risks are encompassed by the specific Standard-related questions v	
	dard 1: Biodiversity Conservation and Sustainable Natural Resource agement	
1.1	Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services?	Yes – only if mitigation measures we not included
1.2	Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	No
1.3	Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4	Would Project activities pose risks to endangered species?	No
1.5	Would the Project pose a risk of introducing invasive alien species?	No
1.6	Does the Project involve harvesting of natural forests, plantation development, or reforestation?	No
1.7	Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	No
1.8	Does the Project involve significant extraction, diversion or containment of surface or ground water?	No
	For example, construction of dams, reservoirs, river basin developments, groundwater extraction	
1.9	Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10	Would the Project generate potential adverse transboundary or global environmental concerns?	No
1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area?	No
	For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.	



Stan	dard 2: Climate Change Mitigation and Adaptation	
2.1	Will the proposed Project result in significant ² greenhouse gas emissions or may exacerbate climate change?	No
2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	Yes – seawater ingress over coastal infrastructure over time or as a result of an extreme event if not properly designed considering future sea level rise and cyclone projections
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)?	No
	For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding	
Stan	dard 3: Community Health, Safety and Working Conditions	
3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	No
3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No
3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	Yes – depending on the final design and size of coastal protection infrastructure
3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No – if engineering design meets international good practice
3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and	No

 $^{^2}$ In regards to CO₂, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]



	radiological hazards during Project construction, operation, or decommissioning?	
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?	No
3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
Stan	dard 4: Cultural Heritage	
4.1	Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Stan	dard 5: Displacement and Resettlement	
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	No
5.2	Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No
5.3	Is there a risk that the Project would lead to forced evictions? ³	No
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	No
Stan	dard 6: Indigenous Peoples	
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	No
6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3	Would the proposed Project potentially affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the Project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)?	No

³ Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.



	If the answer to the screening question 6.3 is "yes" the potential risk impacts are considered potentially severe and/or critical and the Project would be categorized as either Moderate or High Risk.	
6.4	Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.5	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No
6.7	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.8	Would the Project potentially affect the physical and cultural survival of indigenous peoples?	No
6.9	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Stan	dard 7: Pollution Prevention and Resource Efficiency	
7.1	Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	No – limited in quantity but negligible if material for construction is prefabricated and/or bought to specific size
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs?	No
	For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol	
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	No