GEF-8 PROJECT IDENTIFICATION FORM (PIF)

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General Project Information

Project Title	
Vaitupu Coastal Adaptation Project (VCAP)	
Region	GEF Project ID
Asia	12342
Country(ies)	Type of Project
Tuvalu	MSP
GEF Agency(ies):	GEF Agency ID
UNDP	10536
Executing Partner	Executing Partner Type
Ministry of Home Affairs, Climate Change and Environment	Government
GEF Focal Area (s)	Submission Date
Multi Focal Area	5/15/2026
Project Sector (CCM Only)	
Climate Change Adaptation Sector	
Taxonomy	

Integrated Programs, Sustainable Cities, Urban sustainability framework, Influencing models, Strengthen institutional capacity and decision-making, Convene multi-stakeholder alliances, Demonstrate innovative approache, Stakeholders, Private Sector, SMEs, Individuals/Entrepreneurs, Beneficiaries, Local Communities, Civil Society, Non-Governmental Organization, Community Based Organization, Type of Engagement, Information Dissemination, Consultation, Participation, Communications, Awareness Raising, Behavior change, Capacity, Knowledge and Research, Capacity Development, Knowledge Exchange, Knowledge Generation, Learning, Theory of change, Indicators to measure change, Adaptive management, Gender Equality, Gender Mainstreaming, Gender-sensitive indicators, Women groups, Sex-disaggregated indicators, Gender results areas, Access to benefits and services, Participation and leadership, Focal Areas, Biodiversity, Protected Areas and Landscapes, Community Based Natural Resource Mngt, Mainstreaming, Infrastructure, Land Degradation, Sustainable Land Management, Restoration and Rehabilitation of Degraded Lands, Ecosystem Approach, Integrated and Cross-sectoral approach, Climate Change, Climate Change Adaptation, Least Developed Countries, Climate finance, Disaster risk management, Sea-level rise, Climate resilience, Ecosystem-based Adaptation, Innovation, Complementarity, Community-based adaptation, United Nations Framework Convention on Climate Change, Nationally Determined Contribution

Type of Trust Fund	Project Duration (Months)
MTF	48
GEF Project Grant: (a)	GEF Project Non-Grant: (b)
4,416,210.00	0.00
Agency Fee(s) Grant: (c)	Agency Fee(s) Non-Grant (d)
419,540.00	0.00

Total GEF Financing: (a+b+c+d)	Total Co-financing
4,835,750.00	11,450,000.00
PPG Amount: (e)	PPG Agency Fee(s): (f)
150,000.00	14,250.00
PPG total amount: (e+f)	Total GEF Resources: (a+b+c+d+e+f)
164,250.00	5,000,000.00
Project Tags	
CBIT: No NGI: No SGP: No Innovation: Yes Competitive Window: No	

Project Summary

Provide a brief summary description of the project, including: (i) what is the problem and issues to be addressed? (ii) what are the project objectives, and if the project is intended to be transformative, how will this be achieved? iii), how will this be achieved (approach to deliver on objectives), and (iv) what are the GEBs and/or adaptation benefits, and other key expected results. The purpose of the summary is to provide a short, coherent summary for readers. The explanation and justification of the project should be in section B "project description".(max. 250 words, approximately 1/2 page)

Vaitupu Island in Tuvalu faces escalating risks from sea-level rise, wave-driven flooding, storm surge, coastal erosion, and saltwater intrusion. These hazards increasingly disrupt communities, critical infrastructure, and key access routes in a highly constrained atoll environment, where low elevation, narrow land margins, and concentrated coastal development amplify exposure. These challenges are exacerbated by the degradation of critical marine and coastal ecosystems including its extensive coral reefs, lagoons and seagrass beds, which constrain natural coastal defenses and reduce the viability of these globally significant habitats for coral and pelagic species. Current responses remain largely reactive and fragmented, often implemented without the feasibility screening, technical design, and maintenance systems required to deliver sustained risk reduction, resulting in short-lived interventions and increasing long-term vulnerability. At the same time, coastal degradation is intensifying, with loss of vegetation cover, destabilisation of berm systems, and unmanaged extraction contributing to land degradation and reduced shoreline stability, while declining ecosystem condition is weakening coastal habitats and the ecosystem services that support biodiversity and natural protection functions.

The project objective is to reduce storm-wave and coastal flooding risks to people, infrastructure, and land, while enhancing biodiversity, by transitioning to a sequenced, prioritised portfolio of technically feasible, locally managed hybrid adaptation measures. The use of hybrid NbS and integrated coastal zone management also has direct positive impacts on biodiversity through both conservation and restoration of globally significant, rare, highly specialised atoll coastal ecosystems—among the world's most climate-exposed and ecologically specialised environments that support unique biodiversity, critical marine habitats, and ecosystem functions of importance to the wider Pacific region. The projects transformation is achieved by addressing the "missing middle" of atoll adaptation—linking risk information, design, implementation, and long-term stewardship into a coherent system that can sustain performance under increasing climate pressure.

The approach combines: i) strengthened island-level capacity, planning, and decision-making systems; ii) site-specific hybrid coastal protection measures that restore and reinforce storm-built berm systems using Berm-Top Barriers (BTBs) alongside vegetation-based stabilisation; iii) improved management of locally managed marine areas to reduce drivers of degradation and conserve globally important biodiversity; and iv) community-based monitoring, adaptive management, and knowledge products to support replication. Interventions are co-developed with the Kaupule and communities to ensure technical suitability, social legitimacy, and long-term maintenance.

Expected results include reduced coastal exposure across priority shoreline segments, rehabilitation of degraded coastal ecosystems and enhanced biodiversity, strengthened local governance and stewardship systems, and practical knowledge products to inform replication across Tuvalu. The project delivers both adaptation benefits and global environmental benefits through the conservation of globally significant biodiversity, improved shoreline stability, reduced land degradation, and enhanced coastal ecosystem function, while establishing an island-tested, scalable model for hybrid NbS adaptation in atoll contexts.

Indicative Project Overview

Project Objective

To reduce climate-induced storm-wave and coastal flooding risks on Vaitupu and enhance biodiversity by implementing sustainable adaptation investments, including hybrid Nature-based Solutions.

Project Components

Component 1: Capacity development for hybrid Nature-based Solutions

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing ($)	Co-financing ($)
119,000.00	366,400.00

Outcome:

Outcome 1.1: Strengthened local capacity to prioritise, develop, implement and sustain hybrid coastal protection measures and biodiversity-rich ecosystems

Output:

1.1.1. Inclusive, island-wide consultations to strengthen understanding of coastal hazards and biodiversity loss, and enable informed community-driven decision making.

1.1.2. Enhanced Island Strategic Plan for Vaitupu integrating improved coastal resilience and biodiversity-integrated planning, prioritization, and management of coastal protection adaptation measures.

1.1.3. Training programme on hybrid coastal design principles and integrated coastal management.

1.1.4. Standard operating procedures (SOPs) for design, implementation, monitoring, and post-storm rehabilitation of biodiversity-friendly hybrid systems.

Component 1: Capacity development for hybrid Nature-based Solutions

Component Type	Trust Fund
Technical Assistance	LDCF
GEF Project Financing ($)	Co-financing ($)
231,001.00	549,600.00

Outcome:

Outcome 1.1: Strengthened local capacity to prioritise, develop, implement and sustain hybrid coastal protection measures and biodiversity-rich ecosystems

Output:

1.1.1. Inclusive, island-wide consultations to strengthen understanding of coastal hazards and biodiversity loss, and enable informed community-driven decision making.

1.1.2. Enhanced Island Strategic Plan for Vaitupu integrating improved coastal resilience and biodiversity-integrated planning, prioritization, and management of coastal protection adaptation measures.

1.1.3. Training programme on hybrid coastal design principles and integrated coastal management.

1.1.4. Standard operating procedures (SOPs) for design, implementation, monitoring, and post-storm rehabilitation of biodiversity-friendly hybrid systems.

Component 2: Enhanced ecosystem services and hybrid coastal protection measures

Component Type	Trust Fund
Investment	GET
GEF Project Financing ($)	Co-financing ($)
1,239,300.00	3,664,000.00

Outcome:

Outcome 2.1

Reduced exposure of priority coastal areas and enhanced biodiversity through rehabilitated coastal ecosystem services and improved shoreline stability in priority segments

Output:

2.1.1 Site-specific designs developed for coastal protection, rehabilitation and biodiversity conservation measures

2.1.2 Long-term Stewardship agreements for coastal protection and rehabilitation measures

2.1.3 Bern-Top-Barriers (BTBs) installed along the deep-water shoreline adjacent to Asau village

2.1.4 Rehabilitated berm vegetation cover near Motufoua High School and Asau Village

Component 2: Enhanced ecosystem services and hybrid coastal protection measures

Component Type	Trust Fund
Investment	LDCF
GEF Project Financing ($)	Co-financing ($)
2,405,700.00	5,496,000.00

Outcome:

Outcome 2.1

Reduced exposure of priority coastal areas and enhanced biodiversity through rehabilitated coastal ecosystem services and improved shoreline stability in priority segments

Output:

2.1.1 Site-specific designs developed for coastal protection, rehabilitation and biodiversity conservation measures

2.1.2 Long-term Stewardship agreements for coastal protection and rehabilitation measures

2.1.3 Bern-Top-Barriers (BTBs) installed along the deep-water shoreline adjacent to Asau village

2.1.4 Rehabilitated berm vegetation cover near Motufoua High School and Asau Village

M&E

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing ($)	Co-financing ($)
71,711.00	320,600.00

Outcome:

Outcome 3.1 Knowledge generated for replication; adaptive management strengthened

Output:

3.1.1. A community-based Monitoring Framework developed and implemented

3.1.2. Tuvalu atoll Hybrid NbS/EbM toolkit developed

3.1.3. Annual learning reviews conducted and integrated into adaptive management approaches

3.1.4. Learning events hosted

M&E

Component Type	Trust Fund

Technical Assistance	LDCF
GEF Project Financing ($)	Co-financing ($)
139,203.00	480,900.00

Outcome:

Outcome 3.1 Knowledge generated for replication; adaptive management strengthened

Output:

3.1.1. A community-based Monitoring Framework developed and implemented

3.1.2. Tuvalu atoll Hybrid NbS/EbM toolkit developed

3.1.3. Annual learning reviews conducted and integrated into adaptive management approaches

3.1.4. Learning events hosted

Component Balances

Project Components	GEF Project Financing ($)	Co-financing ($)
Component 1: Capacity development for hybrid Nature-based Solutions	119,000.00	366,400.00
Component 1: Capacity development for hybrid Nature-based Solutions	231,001.00	549,600.00
Component 2: Enhanced ecosystem services and hybrid coastal protection measures	1,239,300.00	3,664,000.00
Component 2: Enhanced ecosystem services and hybrid coastal protection measures	2,405,700.00	5,496,000.00
M&E	71,711.00	320,600.00
M&E	139,203.00	480,900.00
Subtotal	**4,205,915.00**	**10,877,500.00**
Project Management Cost	71,500.00	229,000.00
Project Management Cost	138,795.00	343,500.00

Total Project Cost ($)	**4,416,210.00**	**11,450,000.00**

Please provide justification

PROJECT OUTLINE

A. PROJECT RATIONALE

Briefly describe the current situation: the global environmental problems and/or climate vulnerabilities that the project will address, the key elements of the system, and underlying drivers of environmental change in the project context, such as population growth, economic development, climate change, sociocultural and political factors, including conflicts, or technological changes. Describe the objective of the project, and the justification for it. (Approximately 3-5 pages) see guidance here

A. Project Rationale

A.1 Current situation: climate vulnerabilities and global environmental problems addressed

Tuvalu is among the world's most climate-vulnerable countries due to its low-lying atoll geography, highly constrained land area, concentration of people and assets along the coast, and high exposure to sea-level rise, storm surge and wave-driven flooding, coastal erosion and saline intrusion[1][1]. While the majority of the population are located at the capital of Funafuti, which hosts approximately 60–65% of the country's roughly 11,000 inhabitants, significant populations remain distributed across the outer islands. In this context, Vaitupu—as the second most populated island with a resident population of ~1,000 people in 2022—holds strategic importance for national resilience. Its comparatively large and stable population[2][2], role in supporting outer island service provision, and exposure to similar climate hazards mean that strengthening resilience in Vaitupu is critical not only for safeguarding local livelihoods, but also for reducing systemic risk across Tuvalu's dispersed island network. Approximately 53% of the population is aged 15-59, with a further 34% aged below 0-14 and a dependency ratio of 87% (among the lowest in the country). The sex ratio has also continued to increase since 1991, suggesting a relatively high female migration outof the country in recent decades. Vaitupu also hosts several nationally significant services and assets—including the country's largest secondary boarding school, an agricultural station and a clinic complex.

The island has an exceptionally low elevation (Figure 1), averaging just 1.75 meters above sea level (MASL), and only 1.32m above mean high water spring (MHWS) level, with a maximum elevation of 7.68 MASL[1]. This leaves a total land area above MHWS of less than 5km^2, with narrow coastal margins — leaving the island highly sensitive to coastal hazards. Stakeholders routinely identify wave-driven flooding/overtopping and shoreline instability/erosion as priority hazards affecting communities, critical infrastructure and key access routes, with knock-on effects on service continuity (health, education), safety, and economic functioning[3][3]. Disruptions associated with flooding, erosion, and access loss are not experienced uniformly. Women—particularly older women, pregnant women, and women with disabilities—may face

disproportionate mobility, caregiving, and household recovery burdens during flood and storm events, especially where access to health services, schools, and community facilities is disrupted. In such a context, effective adaptation is not only about addressing immediate damages, but about enabling a credible transition to planned, risk-informed, and maintainable investments that can keep pace with escalating climate risks[4][4].

Beyond its climate vulnerability, Vaitupu also supports coastal and lagoon ecosystems of considerable ecological and socio-economic importance. These systems—including reefs, seagrass, coastal vegetation, and associated lagoon habitats—provide critical ecosystem services that underpin fisheries, shoreline stability, and natural coastal protection, while supporting biodiversity and cultural values. However, these ecosystems are increasingly degraded and climate-stressed, reducing both ecological resilience and their capacity to buffer climate hazards. The biodiversity significance and ecological condition of Vaitupu, and their implications for climate resilience and adaptation, are discussed further below.

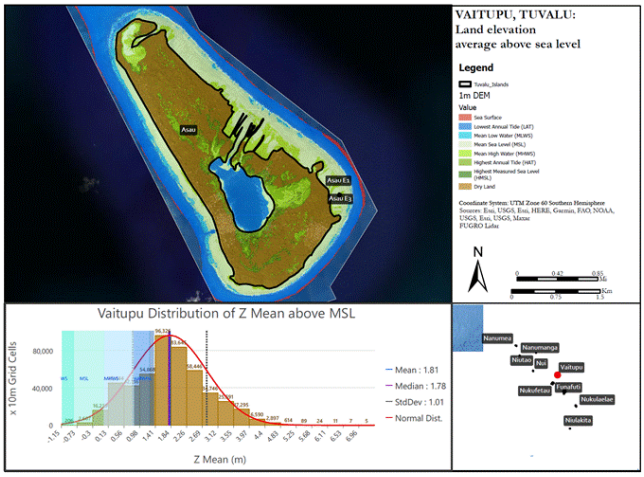

Figure 1. Land elevation above sea level map

Climate Change context

Climate change is having a significant exacerbating impact on the vulnerability of Vaitupu to coastal hazards. While increasing temperatures (↑0.8 °C under RCP2.6 and ↑1.4 °C under RCP 8.5 by 2050) and shifting annual average rainfall (↑3-4% across all emissions scenarios by 2050) pose notable threats to the country's vulnerable communities, it is the exposure to sea level rise (SLR), coastal inundation and tropical cyclones that arguably poses the most pressing threat to the country's low lying islands. In atoll settings, even small increases in mean sea level can translate into disproportionately large increases in the frequency and severity of coastal inundation, particularly when combined with high tides and storm-wave conditions[1]. The impacts are not limited to isolated events; they increasingly manifest as chronic, repeated disruptions to everyday life, public services, and livelihoods, while also increasing the maintenance burden of coastal and public infrastructure.

Tuvalu's climate is influenced by several major atmospheric systems in the western tropical Pacific, including the Intertropical Convergence Zone (ITCZ), South Pacific Convergence Zone (SPCZ), and the West Pacific Monsoon. These systems are associated with convective activity and the formation of tropical cyclones and thunderstorms. These systems, along with the El Niño–Southern Oscillation (ENSO) and Madden-Julian

Oscillation (MJO), contribute to the unpredictability of rainfall, sometimes triggering extreme events like floods or droughts.[5] These large-scale climate drivers also exert strong influence over ocean–atmosphere interactions, shaping regional sea levels, wave regimes, and storm dynamics. As a result, they underpin the frequency and severity of sea-level rise impacts, coastal inundation events, and tropical cyclone activity, which are explored in greater detail below.

Sea level rise and coastal inundation

Sea level rise (SLR) is expected to drive substantial physical transformations in coastal regions globally. The Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report projected a global mean sea-level increase of approximately 0.44 m to 0.74 m by the end of the 21st century, although more recent studies indicate that higher levels of rise may be possible. At the local scale, sea-level change is a highly complex process to quantify and model, influenced by large-scale climate systems such as the ENSO. Evidence suggests that parts of the western Pacific are experiencing rates of sea-level rise above the global average.

In Tuvalu, considerable SLR has already been observed over the past 30 years, with satellite altimetry data from NASA Sea Level Change team show average sea levels having increased by ~0.15 meters relative to 1993 levels, averaging an increase of 5 mm per year over that period (Figure 1)[4]. Future projections show continued rise under all scenarios, with mid-century projections showing an increase of 220-240mm under SSP2-4.5 and SSP5-8.5, respectively.

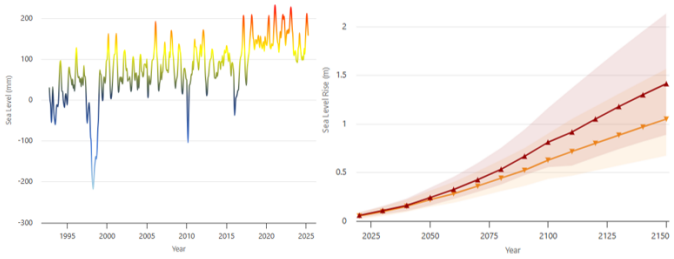

Figure 2: Sea level change in the Tuvaluan EEZ — left: 1993-present; right: Projected, 2025-2150 (Source: WB CCKP 2026)

As noted above, the low-lying topography of Vaitupu exposes the island to severe inundation threats. While coastal inundation is driven by a combination of factor— including high tides, storm surges, wave action, and interannual sea level variability—SLR compounds the threat. While projections vary by island, the overall trend is consistent: flood events will become significantly more frequent across all islands. For Vaitupu, the return period on current 50-year flood events is expected to reduce to 1 in 5 years by 2060 even under moderate emission scenarios (SSP2-4.5). [1]

Inundation modelling for Vaitupu (Figure 3) shows the extent of SLR-linked inundation on the island. By 2050, expansion of the lagoon will lead to parts of the agriculture station and clinic compound facing inundation, with these critical assets facing routine flooding during high spring tides. By 2100, the marine inundation will have covered 60% of the land area—destroying soils, ground water, and terrestrial vegetation—with only parts of the secondary school and main village remaining above high tide water levels. By 2150, the island can no longer be considered safe or habitable. In all scenarios, the modelling looks only at inundation from SLR, and does not factor in wave action or storm surges, the threat from which will becoming increasingly severe. Wave inundation models (Figure 4) show that by the end of the century, a 1 in 100-year storm event, would lead to inundation of the entire island, reaching flood depths of over 2m meters in places.

Figure 3. SLR Inundation modelling for Vaitupu (no waves, green shows area above high water mark) (Source: Arthur Webb)

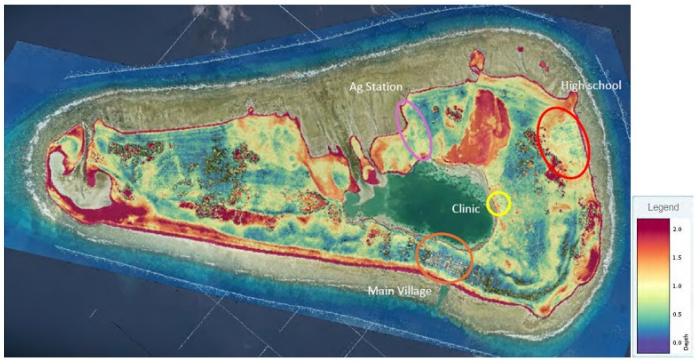

Figure 4. Wave inundation modelling for Vaitupu for 2100 under a 1 in 100 year storm event

Figure 5. Buildings at risk from 1 in 5 year flooding event between current (left) and 2060 (right) under the SSP2-4.5 climate change scenario. The cluster on the left of each image shows the clinic complex, and the right shows the secondary school. Red shapes denote buildings at risk of flooding (Source: Tuvalu Coastal Adaptation Project - TCAP)

Tropical cyclone and extreme wind

A total of 59 tropical cyclones (TCs) either developed or passed Tuvalu's EEZ between the 1970/71 and 2021/22 TC seasons, at an average rate of 11.6 cyclones per decade. The rates of TC occurrence varies interannually, largely influenced by the ENSO cycles, with El Nino years experiencing 5 times the number (~6 per decade) as La Nina years (~1.2 per decade). While such interannual variation and limited data points makes long-term trends unclear, there is evidence of increasing TC intensity and proportion of severe events in the broader Pacific region[5][5]. This is partly evidenced in Tuvalu, where recent decades show a decline in total number of TCs, but a 10.6% increase in intensity—although neither trend is statistically significant. The high variability in climate projections create similar uncertainty in the future of TC behaviour, with simulations showing wide variation in regional projections. Due to limitations in model resolution and parameterisation, TC frequency is likely underestimated, and confidence in local-scale projections remains

low,[6][6] with more late century models showing an decline in TC frequency, consistent with broader southwest Pacific trends.

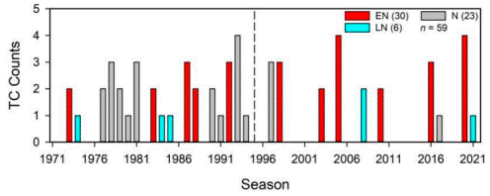

Figure 6. Number of tropical cyclones passing within the Tuvalu EEZ per season (CSIRO, Federation University, Climate Comms, 2024)

While general trends in TC frequency are somewhat uncertain, the impact of the ENSO cycle is likely to become increasingly influential. Future El Niño events are projected to produce 20–40% more TCs in the central Pacific compared to present-day El Niño periods, while La Niña and neutral conditions may see fewer TCs. Given projections of more frequent El Niño-like conditions, increased TC activity in Tuvalu during these phases warrants attention, despite the broader trend of declining TC numbers globally [4;7].

In terms of intensity, mean TC wind speeds are projected to increase by 24–36% under SSP3-7.0, though no significant change is seen under SSP5-8.5. However, the number of extreme wind events rises under both scenarios. Return periods for high-intensity cyclones are expected to shorten, historically occurring once every 30 years, may occur every 10–20 years by century's end, depending on the emissions scenario.[4]

Biodiversity

Biodiversity on Vaitupu, as with other outer islands of Tuvalu, is characterised by relatively low species richness but high ecological importance, particularly in coastal and lagoon systems that underpin livelihoods, fisheries productivity, natural protection functions, groundwater regulation, carbon sequestration and cultural practices. Despite their relatively small size, low elevation and low species diversity, the coastal and marine ecosystems of Tuvalu are of considerable global significance, with high ecological and socio-economic value. Atoll ecosystems represent highly specialised and increasingly threatened environments, supporting unique ecological assemblages and ecosystem functions that are disproportionately important for biodiversity conservation, climate resilience, and blue ecosystem services in the Pacific. Although not yet formally recognized, the ecological characteristics of these systems are consistent with Key Biodiversity Area (KBA) criteria, particularly the presence of threatened species, critical nursery and feeding habitats, and ecological processes that support life-cycle functions of marine biodiversity.

The target island of Vaitupu and its surrounding waters host a range of ecologically important species. Coral reefs are dominated by *Acropora* and *Porites* species, supporting fisheries such as groupers (*Epinephelus* spp.) and parrotfish, as well as invertebrates like giant clams (*Tridacna gigas*, *T. maxima*). The island also provides habitat for globally threatened species including green turtles (*Chelonia mydas*) and hawksbill turtles (*Eretmochelys imbricata*). Coastal ecosystems support seabirds such as black noddy (*Anous minutus*), white tern (*Gygis alba*), and frigatebirds (*Fregata* spp.), while native vegetation like *Scaevola taccada*, *Pisonia grandis*, and *Pandanus tectorius* plays a critical role in shoreline stabilization and ecosystem functioning.

Vaitupu's fragile fringing reefs and coastal mangroves also serve as essential nurseries for hundreds of fish species and natural buffers against climate change impacts like storm surges. Moreover, Tuvalu's vast ocean

territory serves as a vital corridor and spawning ground for globally important marine life, including highly valued tuna species and various vulnerable shark and ray populations. Their vulnerability to climate change, particularly sea-level rise and ocean warming, means that maintaining and restoring ecosystem integrity on islands such as Vaitupu contributes not only to local resilience but also to global efforts to conserve atoll ecosystems and sustain biodiversity within some of the world's most climate-exposed coastal environments.

National assessments, including the Tuvalu National Biodiversity Strategy and Action Plan (NBSAP) and the Tuvalu State of Environment Report, highlight ongoing degradation of key ecosystems—such as coral reefs, seagrass beds, lagoon systems, and coastal vegetation—driven by pressures including coastal erosion, unsustainable resource use, pollution, and climate change impacts (notably sea-level rise and increasing sea surface temperatures). Terrestrial biodiversity is similarly constrained and vulnerable, with native vegetation often replaced or fragmented by settlement expansion and invasive species. These documents emphasise that while biodiversity remains central to food security, shoreline stability, and cultural practices, it is under increasing stress, with limited ecological resilience and institutional capacity constraining effective conservation and restoration efforts.

Tuvalu's National Biodiversity Strategy and Action plan (NBSAP) identifies invasive species as the highest priority for Vaitupu, followed by over harvesting and unsustainable use of resources, and climate change. Common invasive species in Tuvalu's atoll ecosystems, including Vaitupu, include the Pacific rat (*Rattus exulans*), which preys on seabird eggs and disrupts nesting colonies; invasive plants such as mile-a-minute vine (*Mikania micrantha*) and wedelia (*Sphagneticola trilobata*), which outcompete native coastal vegetation; and the coconut rhinoceros beetle (*Oryctes rhinoceros*), which damages coconut palms and undermines agroforestry systems. These invasive species contribute to habitat degradation, reduce native biodiversity, and weaken the integrity of ecosystem services. The combined pressures of climate change and invasive species significantly reduce the resilience of coral reefs, coastal vegetation, and key habitats for turtles and seabirds. This, in turn, diminishes natural coastal protection and increases vulnerability to wave-driven flooding and storm surge in low-lying islands such as Vaitupu.

The island includes the Vaitupu Locally Managed Marine Area (LMMA)—a community-managed conservation and fisheries management area governed through the Vaitupu Kaupule and Falekaupule, reflecting Tuvalu's long-standing tradition of customary marine stewardship (Figure 7). The LMMA is recognised within the national network of protected and managed marine areas and is registered in the World Database on Protected Areas (WDPA; ID 555547865) as an established LMMA (2003). The LMMA covers the whole island extending out 12 nautical miles from the baseline, with Special Protected Areas (SPAs) established under the Falekaupule as community conservation areas within parts of the larger lagoon and the smaller northern lagoon. The LMMA was established principally to support sustainable fisheries management, biodiversity conservation, and food security, recognising the importance of lagoon and reef ecosystems to local livelihoods and culture. The Vaitupu Coastal Fisheries Management Plan frames the LMMA as a mechanism for the conservation, sustainable management, and recovery of coastal fisheries resources, encompassing traditional fishing practices and community stewardship arrangements. Ecologically, the LMMA protects interconnected lagoon, reef, and coastal ecosystems that support fish populations, marine biodiversity, and ecosystem services critical to island resilience. Although management capacity and monitoring remain constrained, the area contributes to Tuvalu's broader marine conservation network and demonstrates the importance of locally governed conservation systems in sustaining marine resources and ecosystem function.

Climate change poses growing risks to the ecological health and functioning of the Vaitupu LMMA. Rising sea temperatures contribute to coral bleaching and reef degradation, while ocean acidification can weaken reef-building processes that underpin lagoon productivity and coastal protection. Sea-level rise, changing wave regimes, and increased coastal erosion may alter sediment dynamics and affect lagoon and nearshore habitats, including seagrass and coastal vegetation systems that support fisheries and biodiversity. More frequent or intense storm events can further damage reef and coastal ecosystems, reducing habitat quality and fish abundance. These pressures threaten not only biodiversity and ecosystem resilience, but also the food security, livelihoods, and cultural practices that depend on healthy lagoon and coastal ecosystems,

highlighting the importance of adaptive and community-led management systems within the LMMA. Strengthening the resilience and sustainable management of these ecosystems—including targeted invasive species management—is therefore essential not only for conserving biodiversity, but also for maintaining nature-based defenses, sustaining fisheries, and supporting long-term climate adaptation pathways across Tuvalu.

A.2 Underlying drivers and root causes of environmental change and vulnerability in the project context

Vaitupu's climate vulnerability arises from the interaction of multiple reinforcing environmental, spatial, and socio-institutional dynamics that shape both exposure to hazards and the performance of response systems. As outlined in the preceding climate analysis, sea-level rise and changing ocean–atmosphere conditions are intensifying baseline hazard conditions. However, risk is fundamentally driven by how these hazards interact with the island's physical constraints, settlement patterns, ecosystem condition, and governance systems.

Vaitupu functions as a tightly coupled socio-ecological system in which coastal processes, infrastructure, and community systems are interdependent. The island's low elevation, narrow land width, and lagoon–ocean exposure create a coastal hazard regime where wave dynamics, tides, and storm events directly affect settlement areas and access corridors. Critical infrastructure—including roads linking communities to schools, health services, and public buildings—is concentrated along these exposed coastal margins, meaning that even small disruptions can have island-wide impacts on service access and emergency response.

Land, coastal, and ecosystem degradation

Land, coastal, and ecosystem degradation in Vaitupu reflects the combined effects of chronic environmental stress and cumulative human pressures acting on a physically constrained atoll system. With limited land area, low elevation, and a strong dependence on healthy coastal ecosystems for protection and livelihoods, even incremental degradation has system-wide implications for shoreline stability, freshwater availability, and habitability.

- **Environmental drivers:**
  - **Sea-level rise and wave dynamics:** Rising baseline sea levels increase the frequency of wave overtopping and inundation, accelerating coastal erosion and sediment redistribution.
  - **Coral reef degradation:** Elevated sea surface temperatures—particularly during El Niño events—have contributed to coral bleaching, reducing reef structural integrity. This diminishes natural wave attenuation, exposing shorelines to higher wave forces.
  - **Storm events and variability:** Cyclones and episodic high-energy wave events can cause rapid shoreline change, overwash, and vegetation loss.
  - **Salinisation and drought:** Saltwater intrusion and periodic drought stress coastal vegetation, reducing the resilience of natural buffers such as mangroves and strand vegetation.
  - **Saltwater intrusion into soils and groundwater:** Rising sea levels and overtopping events contaminate freshwater lenses, reducing soil productivity and affecting traditional crops such as pulaka.
  - **Limited natural regeneration:** Thin soils and low nutrient availability constrain recovery following disturbance, particularly under changing rainfall patterns.
- **Anthropogenic drivers:**
  - **Mangrove clearance and coastal modification:** Localised clearing for settlement expansion, infrastructure, and access reduces natural protection and increases exposure to erosion and heat stress.

- **Aggregate extraction (sand and coral):** Removal of beach and reef materials for construction disrupts sediment budgets and weakens coastal stability.
- **Unplanned or reactive hard structures:** Seawalls and revetments constructed without system-level design can exacerbate erosion downstream by altering natural sediment flows.
- **Waste and pollution:** Solid waste accumulation and nutrient loading can degrade nearshore ecosystems, affecting reef health.
- **Population concentration and land pressure:** Settlement patterns concentrate activity along narrow coastal strips, intensifying land use and reducing vegetative cover.
- **Land reclamation and infilling:** Modifications to create usable space can alter drainage patterns and exacerbate flooding or waterlogging.
- **Resource overuse:** Continuous cultivation and limited fallow periods reduce soil fertility and resilience.

- **Infrastructure footprint:** Expansion of housing, roads, and public facilities reduces permeable surfaces and natural buffering capacity.

The degradation of coastal and terrestrial systems in Vaitupu is not isolated—it directly undermines the island's natural defence mechanisms and amplifies exposure to climate hazards. Loss of reef health reduces wave attenuation; mangrove and vegetation loss weakens shoreline stability; and degraded soils and freshwater systems constrain livelihoods and adaptive capacity. These dynamics are most visibly expressed through accelerating coastal erosion, where disrupted sediment systems and increased wave action combine to drive shoreline retreat and land loss (Figure 8). Together, these processes create a reinforcing feedback loop in which increasing hazard pressure accelerates degradation, while degradation in turn heightens vulnerability—underscoring the need for integrated, system-based adaptation approaches that address both environmental restoration and the underlying drivers.

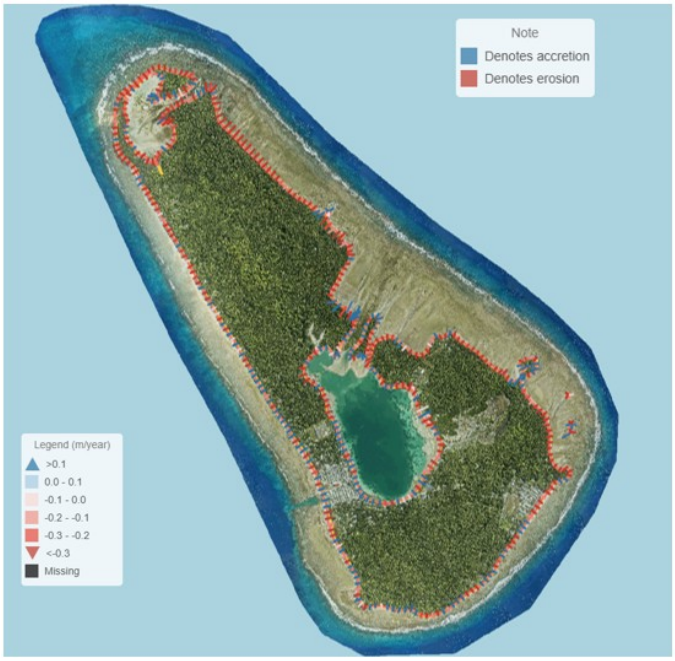

Figure 8. Shoreline Erosion between 2018 and 2021 (Source: Tuvalu Coastal Adaptation Project - TCAP)

Population dynamics and development pressures

Population distribution and growth patterns in Vaitupu are a central underlying driver of vulnerability, shaping both exposure to hazards and the feasibility of adaptation responses. Limited land availability concentrates settlements, infrastructure, and services along the most hazard-prone coastal zones. This spatial concentration increases exposure while constraining options for relocation or retreat. Incremental expansion of housing and community infrastructure can further encroach on natural buffers such as coastal vegetation, compounding risk over time. At the same time, land tenure systems—combining communal lagoon ownership with predominantly private coastal land—shape where and how interventions can be implemented, requiring alignment with local governance structures and community priorities. Moreover, the need to accommodate population needs places pressure on already limited land and resources, reinforcing trade-offs between development and risk reduction.

Governance and institutional capacity context

Vaitupu's governance system—anchored in the Kaupule (local island administration/executive body), and the Falekaupule (traditional authority)—provides strong local legitimacy and social cohesion, enabling collective decision-making and mobilization— with the Falekaupule providing traditional legitimacy. However, adaptation outcomes are highly dependent on coordination across national and island-level actors, as well as sustained ownership of interventions. In this context, the effectiveness of both engineered and nature-based measures is closely linked to clarity of roles, long-term stewardship, and the ability to integrate planning, implementation, and maintenance. Effective adaptation also depends on inclusive decision-making processes that recognise differentiated needs and ensure meaningful participation of women, youth, and persons with disabilities in planning and stewardship arrangements.

Economic, logistical, and operational realities

Vaitupu's remoteness and small scale create structural constraints that shape what is feasible. High transport costs, reliance on imported materials, and irregular shipping schedules (often limited to monthly deliveries) affect the timing, cost, and durability of interventions. Locally available materials such as seedlings may support nature-based solutions, but tools, fencing, and specialised inputs often need to be sourced from Funafuti or overseas (e.g. Fiji). At the same time, availability of local labour and strong community organisation provide opportunities for implementation, particularly for nature-based and community-driven approaches. The use of locally sourced sand/materials can also reduce logistics costs where Kaupule approval and environmental safeguards are secured.

Technological and information constraints

While climate and hazard data are increasingly available, a key systemic challenge lies in translating this information into actionable, location-specific, prioritised, and implementable solutions. Gaps between data, planning, and execution can delay decision-making and contribute to reactive responses, particularly in high-risk coastal zones where impacts are already visible.

System interaction and feedbacks

These drivers are mutually reinforcing, with risks emerging most acutely at priority sites where exposure, asset concentration, and system constraints intersect to create reinforcing risk cycles. Degraded ecosystems increase exposure; concentrated development amplifies impacts; and disruptions to critical infrastructure reduce system resilience. At priority sites along the lagoon frontage and around the Elisefou agricultural station, these pressures converge, resulting in repeated damage to assets and infrastructure. This often results in short-term, reactive repairs to protect critical infrastructure, which, while necessary, tend to absorb scarce financial and technical resources without addressing the underlying drivers of coastal erosion, inundation, and

long-term instability. Without integrated, system-level responses, interventions risk addressing symptoms rather than underlying drivers.

A.3 Baseline scenario in the absence of the project

Under the baseline (business-as-usual) scenario, adaptation actions on Vaitupu are expected to remain reactive and localized, relying on small-scale shoreline works, basic drainage measures and post-event repairs. These actions tend to be implemented without a comprehensive, forward-looking hazard assessment and without robust options analysis across hard, soft and hybrid measures. As a result, interventions may be under-designed, mis-sited, or difficult to maintain, generating short-lived benefits and requiring repeated repairs.

Barriers

i) *High upfront costs for feasibility and procurement-ready design:* Robust site-specific analysis and engineering design are essential in atoll environments, where small errors can significantly affect performance. However, the high cost of these preparatory steps often limits investment, leading to under-designed or short-term interventions, particularly in high-risk coastal zones. Without sufficient investment in site-specific analysis, interventions tend to be reactive and under-designed, resulting in repeated repairs rather than long-term risk reduction. Procurement processes can also pose practical challenges, particularly where requirements for multiple supplier quotations are difficult to meet in small island markets. These constraints elevate the importance of selecting interventions that are not only technically sound but logistically feasible and maintainable over time, particularly for critical public assets located in high-risk coastal zones.

ii) *Limited local and institutional capacity to plan and maintain complex measures:* While Vaitupu has strong local governance and community structures, there are constraints in technical capacity for detailed design, procurement, and long-term asset management. Limitations in high-resolution coastal data, bathymetry, and long-term monitoring further reduce the precision of risk assessments, while technical tools and models may not always be accessible or usable at the local level. This limits the ability to translate identified risks into costed, implementable and sustainable solutions. Maintenance is another particular challenge, as limited access to tools, materials, and technical expertise can reduce the lifespan and effectiveness of interventions, especially under dynamic coastal conditions. Addressing these constraints requires not only improved data collection and systems, but also targeted capacity to interpret, communicate, and operationalise information within planning, budgeting, and engineering processes.

iii) *Fragmentation across planning and implementation processes:* Adaptation efforts in Vaitupu are shaped by multiple actors across national and island levels, which can lead to fragmented planning and implementation. Coastal protection, land-use planning, and disaster management are often addressed separately, resulting in piecemeal interventions that do not account for system-wide coastal dynamics and may unintentionally exacerbate erosion or risk in adjacent areas. Combined with technical capacity constraints in areas such as detailed design, procurement preparation, and long-term O&M planning, this fragmentation reinforces the need for structured coordination mechanisms to translate priorities into coherent, system-based investment pathways.

iv) *Gaps in inclusive decision-making and local ownership:* Although strong community governance structures exist, ensuring fully inclusive and well-coordinated decision-making remains a challenge. All project activities must follow established approval pathways—initiated through the Department of Home Affairs and formal endorsement by the Kaupule and Falekaupule—which, while essential for legitimacy and community ownership, introduce procedural steps that require careful sequencing and coordination. Moreover, consultation and stewardship arrangements may unintentionally privilege male voices or overlook constraints faced by women and caregivers, limiting influence over site prioritisation and reducing long-term ownership. Approval processes and

land tenure considerations require careful engagement with the Kaupule, Falekaupule, and local communities, particularly in high-priority areas. Where this is not effectively managed, it can delay implementation or weaken local ownership, undermining long-term sustainability. When done well, however, strong community cohesion provides a solid foundation for participatory planning and ongoing stewardship.

Enablers

i) *Strong local governance and social cohesion:* Established governance structures and high community cohesion provide a solid foundation for participatory planning, rapid mobilisation, and sustained stewardship of interventions — if adequately accounted for in the project design.

ii) *Clear prioritisation around high-risk sites and critical assets:* There is already a strong, locally validated understanding of priority areas—particularly the lagoon-front stretch between the Tolise Primary School (at the northern perimeter of the main village) and the health clinic (on the south-eastern bank of the lagoon), and the Elisefou agricultural station. The presence of essential public infrastructure in these zones creates a clear entry point for targeted, high-impact interventions, enabling the project to focus resources where risk reduction and social benefits are most immediate and visible.

iii) *Existing community-based monitoring and adaptive learning practices:* Routine monitoring and reporting systems, led by Kaupule members with environmental portfolios, provide an embedded mechanism for tracking changes in coastal conditions, erosion, and environmental stress. While largely informal, these practices create a foundation for strengthening data-informed decision-making, supporting adaptive management, and integrating local knowledge into technical design and long-term resilience planning.

A.4 Project objective and justification

Project objective: To reduce climate-induced storm-wave and coastal flooding risks on Vaitupu and enhance biodiversity by implementing sustainable adaptation investments, including hybrid Nature-based Solutions.

VCAP's outcomes are designed to endure in the face of uncertain future conditions (including changing wave climates and extreme event patterns) through: i) robust option appraisal and designs that incorporate future scenarios; ii) phased implementation and contingency planning; iii) community stewardship and O&M systems; and iv) monitoring and learning loops that support adaptive management and course correction over time.

Target Sites: Several high-risk sites have been identified along the south-western lagoon-front stretch between the Tolise Primary School and the health clinic, along with the secondary school on the eastern shores and the agricultural station near Elisefou. These areas host essential infrastructure—including schools, the Kaupule office, the health clinic, and residential housing—that are already exposed to coastal erosion and king tide inundation.

Figure 9. Priority sites for coastal resilience

Project justification: The VCAP project is positioned to address the "missing middle" between reactive measures and long-term resilience by supporting feasibility and detailed design, enabling inclusive and locally grounded prioritisation through the Kaupule and community structures, and facilitating sequenced implementation with embedded operation, maintenance, and learning systems to ensure sustained impact. It addresses the principal barriers that prevent transformational adaptation on Vaitupu, providing the incremental resources and structured approach required to:

- **Translate risk information into implementable investment packages.** The project supports the generation and use of hazard and inundation evidence to identify feasible options and develop procurement-ready designs and specifications. This reduces the risk of under-designed works, repeated rework, and maladaptation.
- **Enable transparent and inclusive prioritization and sequencing**. VCAP convenes national and island-level stakeholders to validate risks, agree priorities and trade-offs, and confirm sequencing; anchored in Kaupule legitimacy and inclusive participation ensuring that women, youth, and persons with disabilities have meaningful influence over site prioritisation, design considerations, and stewardship arrangements. This increases ownership and the durability of decisions.
- **Deliver a hybrid portfolio that reflects atoll realities**. The project supports an approach that integrates bioengineered measures where needed with NbS elements—such as mangrove rehabilitation/restoration and dune/coastal vegetation stabilization (including bioengineering and vegetated buffers) where feasible and cost-effective. Hybrid measures can strengthen shoreline stability and generate ecosystem co-benefits while managing maintenance burdens.
- **Strengthen O&M readiness and long-term sustainability.** VCAP explicitly invests in maintenance capacity: training, stewardship arrangements, and practical O&M systems that clarify roles and provide routines, tools and monitoring. This is essential to ensure that adaptation benefits endure beyond construction or initial establishment of NbS interventions.

- **Generate globally relevant learning on atoll adaptation.** The project will document costs, performance, and limits of adaptation measures in an extremely vulnerable atoll setting, generating transferable knowledge relevant to other atoll SIDS and low-lying coasts. This learning function strengthens the global environmental value of the project by improving future investment choices and reducing the risk of maladaptation.

This approach provides a balanced response to the underlying system drivers of vulnerability, targeting the most urgent and disruptive risks (wave-driven flooding and erosion affecting people, infrastructure and access routes) while building the enabling conditions — evidence, legitimacy, sequencing and O&M — required for durable adaptation. Alternatives such as isolated small shoreline repairs or short-term planting initiatives are unlikely to yield sustained risk reduction, while large-scale engineered programmes are planned for a future second stage.

A.7 Stakeholders, National Priorities and Baseline Investments

Stakeholders are central to VCAP's rationale because sustained performance depends on coordinated roles and legitimate decisions. This collective action is required to deliver adaptation benefits that endure and to generate knowledge products that support replication and scaling. Key stakeholders have been integrated throughout the design of the project, as summarised below.

- **Government counterparts (national level):** Provide policy alignment with national frameworks (e.g. National Adaptation Plan), technical oversight, safeguards guidance, and coordination across sectors and investments.
- **Vaitupu Kaupule and island institutions:** Convene consultations, validate priorities, and ensure local legitimacy, while supporting stewardship arrangements and long-term operation and maintenance (O&M).
- **Communities and vulnerable groups (women, youth, persons with disabilities, vulnerable households):** Inform priorities, validate designs, participate in monitoring and stewardship, and ensure equitable benefit-sharing. Women's groups are recognised as important actors in community coordination, monitoring, and stewardship where barriers to participation are addressed.
- **Private sector and service providers:** Support feasibility, design, supervision, and implementation; supply materials; and contribute technical capacity through transparent procurement and local contracting arrangements.
- **Regional technical partners (where applicable):** Provide technical tools, knowledge exchange, and lessons to support scaling and adaptive learning.

- **United Nations Development Programme (UNDP) and technical providers:** Ensure fiduciary oversight, procurement, and quality assurance, while delivering technical support for feasibility, design, training, and implementation.

The project aligns with Tuvalu's national priorities as articulated in key frameworks such as Te Kaniva (National Climate Change Policy) and the National Strategic Action Plan (NSAP), by strengthening coastal resilience, integrating climate risk into island-level planning, and protecting critical infrastructure and livelihoods. Actions are further aligned with priority interventions identified in the National Adaptation Plan (NAP), including: i) immediate (years 1–2) priority adaptation pathways for initiating nature-based adaptation interventions on outer islands (e.g., mangrove restoration, berm top barriers); and short-term (0-10 years) priority adaptation pathways for scaling up coastal defences and monitoring reclamation effectiveness through TCAP and MTAP. It also supports land degradation neutrality objectives by restoring and sustaining coastal ecosystems that underpin shoreline stability, reduce erosion, and maintain essential ecosystem services. By linking national policy objectives with locally prioritised, implementable interventions on Vaitupu, the project operationalises these strategies at the island level. VCAP will also be designed and implemented in close coordination with ongoing national, regional, and international initiatives to ensure complementarity, avoid duplication, and maximize impact and sustainability. This coordination is described in more detail in Section B.4.

[1] Wandres, M., Espejo, A., Sovea, T., & Tetoa, S. (2024). A national-scale coastal flood hazard assessment for the atoll nation of Tuvalu.

[2] After a period of decline from 2022-2017, the population has stablised over recent years

[3] Lazrus, H., & Lazrus, H. (2015). Risk Perception and Climate Adaptation in Tuvalu: A Combined Cultural Theory and Traditional Knowledge Approach. Human Organization, 74, 52–61.

[4] Muccione, V., Haasnoot, M., & Alexander, P. (2024). Adaptation pathways for effective responses to climate change risks.

[5] Government of Tuvalu. 2025. Tuvalu National Adaptation Plan.

[6] Knutson, T., Camargo, S. J., Chan, J. C., Emanual, K., Ho, C. H., Kossin, J., Walsh, K. (2019). Tropical cyclones and climate change assessment: Part I: Detection and attribution. Bulletin of the American Meteorological Society, 1987-2007.

[7] CSIRO, Federation University, Climate Comms. (2024). Assessment of climate hazards and associated sectoral impacts for Tuvalu under current and future conditions.

B. PROJECT DESCRIPTION

Project description

This section asks for a theory of change as part of a joined-up description of the project as a whole. The project description is expected to cover the key elements of good project design in an integrated way. It is also expected to meet the GEF's policy requirements on gender, stakeholders, private sector, and knowledge management and learning (see section D). This section should be a narrative that reads like a joined-up story and not independent elements that answer the guiding questions contained in the PIF guidance document. (Approximately 3-5 pages) see guidance here

B. Project Description

VCAP is designed to reduce coastal climate risks on Vaitupu Island by strengthening, restoring, and sustaining hybrid coastal protection systems rooted in the island's natural geomorphic and ecological processes. Vaitupu is increasingly exposed to sea-level rise, wave-driven flooding, storm surge, coastal erosion, and saltwater intrusion, with impacts concentrated along low-lying settlement frontage and critical access routes that underpin service delivery and daily mobility. In atoll environments, these hazards interact with narrow land margins and limited sediment buffers, meaning that reactive, short-term responses are both costly and ineffective in maintaining land stability and function.

The project advances a hybrid nature-based solutions approach that treats coastal protection as a system combining restored berm geomorphology, vegetation stabilisation, and targeted reinforcement where required—restoring and maintaining protective ecosystem functions. Central to this is the rehabilitation and strengthening of storm-built berm systems along exposed shorelines, including the application of Berm-Top Barriers (BTBs) as measures that reinforce natural coastal ridges, reduce overtopping and erosion, and protect land, soils, and freshwater resources. These are complemented by vegetation-based stabilisation using native species and bioengineering techniques to enhance sediment retention and long-term shoreline resilience.

Recognising that sustained performance depends on local systems as much as physical interventions, the project strengthens island-level planning, technical capacity, and governance arrangements to support effective prioritisation, implementation, and long-term maintenance. It further embeds stewardship and monitoring within the community, ensuring that coastal protection measures are locally managed and responsive to changing conditions. Finally, the project is designed to generate practical, atoll-specific knowledge that can inform replication across Tuvalu, moving beyond site-level interventions towards a scalable model for coastal resilience.

B.1 Theory of Change

Objective Statement: If Vaitupu establishes the local capacity, planning systems, and technical guidance to prioritise and implement hybrid coastal protection measures and integrated coastal zone management aligned with natural berm and ecosystem processes, and sustains these through stewardship, monitoring, and learning, then biodiversity will be conserved and coastal exposure of people, land, and infrastructure will be reduced and maintained over time, because protective coastal functions are restored, locally managed, and continuously improved and replicated.

The Theory of Change focuses on how these elements interact to deliver sustained risk reduction. At the core of the logic is the premise that coastal risk reduction on atolls depends on correctly identifying where hybrid systems will work, implementing them in line with natural geomorphic processes, and sustaining them through local stewardship and adaptive management. It further considers that biodiversity is a critical component to heathy ecosystems, and that conservation of biodiversity is essential to ensure the continued provision of critical protective and provisioning ecosystem services. Strengthened local systems create the conditions for informed, risk-based prioritisation and coordinated action, shifting coastal management away from reactive responses towards integrated and sustainable approaches. This enables the application of hybrid interventions that work with natural coastal processes, restoring berm function and vegetation cover to stabilise shorelines and reduce erosion and overtopping in priority areas—protecting land, infrastructure, and freshwater resources in priority segments—while conserving biodiversity. These systems depend on inclusive participation and gender-responsive governance, recognising that adaptation measures are more durable where women and vulnerable groups influence decisions, access benefits equitably, and participate in stewardship and monitoring.

Sustained outcomes depend on these systems remaining functional over time. Embedding stewardship, routine maintenance, and locally appropriate monitoring ensures that interventions continue to perform and are adjusted as conditions change, avoiding the decline often seen after initial implementation. At the same time, structured learning and knowledge capture translate local experience into practical guidance and tools, enabling replication across other atolls.

Through this sequence, strengthened capacity and systems lead to effective implementation, which in turn leads to sustained performance and replication — collectively delivering healthy ecosystems, reduced coastal exposure and improved resilience on Vaitupu.

Key assumptions

The ToC relies on a limited set of critical assumptions:

- **Social feasibility:** priority sites and interventions can be agreed through Kaupule-led, inclusive processes.
- **Technical suitability:** berm-based and vegetation interventions are appropriate to local geomorphic and ecological conditions.
- **Institutional continuity:** local actors maintain stewardship and apply SOPs beyond initial implementation.
- **Learning uptake:** monitoring is implemented consistently enough to inform decisions and replication.

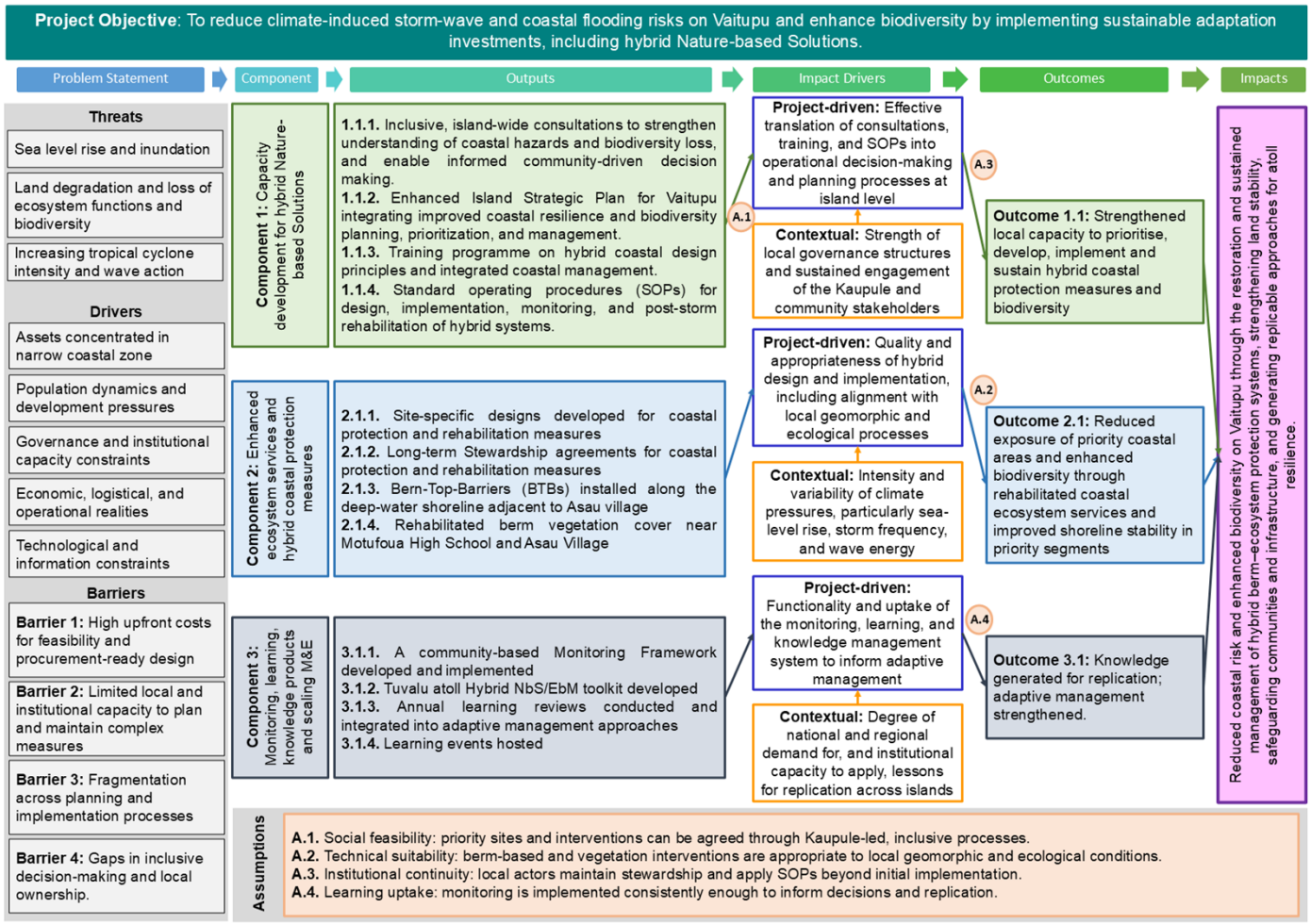

Figure 10. VCAP Theory of Change

Future Narratives: VCAP's forward-looking approach is structured remain robust under plausible future changes centred around two critical drivers that will shape coastal risk and adaptation outcomes on Vaitupu. The first driver is climate forcing intensity, reflecting the combined effects of sea-level rise, storm surge, and wave energy. This determines the magnitude and frequency of physical pressures acting on berm systems, coastal vegetation, and low-lying land. The second driver is local system effectiveness, capturing the strength of island-level planning, technical capacity, governance, stewardship, and the ability to maintain and adapt hybrid coastal protection measures over time.

Together, these drivers define four plausible future scenarios:

I. In a managed resilience scenario, climate pressures increase gradually while local systems function effectively. Hybrid coastal protection measures are well designed, maintained, and adapted over time, allowing berm systems and vegetation to stabilise shorelines and reduce erosion and overtopping. Coastal risks are reduced and sustained, and Vaitupu provides a strong model for replication across Tuvalu.

II. In a climate outpaces systems scenario, sea-level rise and storm intensity accelerate beyond historical trends, but local systems remain strong. Hybrid interventions continue to function but require more frequent maintenance, reinforcement, and adjustment. While some residual risk remains, particularly during extreme

events, the systems in place still significantly reduce impacts and extend the viability of coastal land and infrastructure.

III. In a missed opportunity scenario, climate pressures remain within manageable bounds, but local systems are weak or inconsistently applied. Poor prioritisation, limited maintenance, and weak governance result in hybrid measures that are ineffective or short-lived. As a result, shoreline instability and erosion continue, and the potential for cost-effective risk reduction is not realised.

IV. In a system stress and breakdown scenario, high climate pressures coincide with weak local systems. Hybrid measures fail to establish or are not maintained, leading to widespread overtopping, erosion, and salinisation. Coastal land and infrastructure are increasingly exposed, and adaptation responses may need to shift toward more reactive or transformative measures.

The project is designed to influence this future space by strengthening local systems, thereby increasing the likelihood that Vaitupu can maintain effective coastal protection under a range of climate conditions, including more severe scenarios.

B.2 Project Components and Interventions

Component 1: Capacity development for hybrid Nature-based Solutions

Outcome 1.1 focuses on strengthening local capacity to prioritise, develop, implement, and sustain hybrid coastal protection measures and biodiversity on Vaitupu. This outcome establishes the enabling environment required to move from reactive shoreline responses to planned, risk-informed coastal management. Through inclusive, island-wide consultations, communities and local institutions develop a shared understanding of coastal hazards, shoreline dynamics, biodiversity and feasible response options(Output 1.1.1). These efforts will include the use of hazard maps developed through the TCAP project as tools for climate-resilient land-use planning. Specific focus will be given to inclusivity in the approach, ensuring active involvement of women's groups, youth, persons with disabilities, land users and fishers. This is translated into an enhanced Island Strategic Plan (ISP) that integrates coastal resilience priorities with biodiversity and ecosystem services through an integrated coastal zone management approach (Output 1.1.2). The focus of the enhanced ISP will include improved management of the Vaitupu Locally Managed Marine Area (LMMA) and the wider nearshore lagoon and reef-flat areas adjacent to the priority coastal stabilization sites, underpinned by more comprehensive assessments of the state and effectiveness of the LMMA for biodiversity conservation. By improving the management of these critical coastal and marine ecosystems, the project will not only contribute to the conservation of globally significant mangroves and coral reef ecosystems within the LMMA in general as well as the particularly sensitive and ecologically important SPAs, but will also enhance the provisioning and protective ecosystem services they provide.

The sustainability and operation of these outputs will be supported by targeted training to local communities and decision makers on hybrid coastal design principles and integrated coastal zone management (Output 1.1.3) and the development of practical standard operating procedures (SOPs) to guide implementation, monitoring, and post-storm recovery, integrating biodiversity-friendly measures into the SOPs for hybrid systems (Output 1.1.4). Consultation and training processes will be designed to reduce participation barriers through accessible venues, appropriate timing, and targeted engagement with women's groups, ensuring that women's perspectives influence site selection, stewardship rules, and design decisions.

Together, these outputs build the institutional and technical foundation for sustained action by clarifying roles, strengthening decision-making processes, and equipping local actors with the skills and tools needed to apply biodiversity-friendly hybrid approaches effectively. By embedding coastal protection within island-level planning and governance systems, and ensuring that knowledge is both locally grounded and technically

robust, the outcome creates the conditions for well-prioritised interventions, consistent implementation, and long-term maintenance. This shifts coastal management from short-term, ad hoc responses toward a structured system capable of sustaining effective protection over time through fit-for-purpose for atoll decision-making. This shift also recognises and leverages the protective functions of natural ecosystems—such as vegetation-stabilised berms and coastal buffers—which, when properly designed and maintained, enhance shoreline stability, support biodiversity, and provide adaptive, self-reinforcing protection that complements and reduces reliance on hard engineering over time.

Component 2: Enhanced ecosystem services and hybrid coastal protection measures

Outcome 2.1 delivers reduced exposure of priority coastal areas through rehabilitated coastal ecosystem services and improved shoreline stability in targeted segments. This is achieved by translating risk-informed priorities into site-specific biodiversity-friendly hybrid designs, developed through participatory validation with the Kaupule, communities, and technical stakeholders (Output 2.1.1). These designs are grounded in feasibility assessments that consider ecosystem conditions, biodiversity, hydrology, and sediment dynamics, ensuring that interventions are both technically appropriate and aligned with natural coastal processes. By grounding the interventions in robust data- and community-driven design approaches, the project will maximise benefits for both coastal protection and biodiversity conservation, prioritizing enhanced ecological integrity and reduced sedimentation alongside costal protection. Although interventions are focused predominantly along developed coastal frontage due to risk exposure, these sites directly influence the condition and connectivity of adjacent globally significant biodiversity habitats, including coral reefs, seagrass beds, and lagoon ecosystems that support species such as green turtles, hawksbill turtles, reef fish assemblages, and giant clams.

On-the-ground implementation focuses on restoring and reinforcing storm-built berm systems, including the installation of Berm-Top Barriers (BTBs) along high-exposure shorelines (Output 2.1.3), alongside the rehabilitation of coastal vegetation[1][7], assisted natural regeneration (including protection, seedling safeguarding, and removal of invasive species), and targeted planting (establishing nurseries and ensuring appropriate species selection and spacing) (Output 2.1.4). In both cases, site selection will consider not only the vulnerability of coastal infrastructure, but also the broader landscape benefits for addressing the drivers of degradation and biodiversity loss – including erosion, sedimentation and invasive species. Ecosystem restoration elements of the approach will include specific focus on maintaining/enhancing biodiversity, including the use of bird-friendly, native vegetation. These will be complemented by softer protection measures through community rules/agreements, signage and basic monitoring routines, which will include specific consideration for the protection of sensitive breeding/nesting grounds. Community stakeholders are engaged throughout, from site validation to implementation, ensuring that local knowledge informs design and that interventions reflect shared priorities. To this end, interventions will include community-centric activities that promote ownership and improve the effectiveness of the LMMA. Site validation and implementation planning will incorporate safety and accessibility considerations, including safe access routes, accessible monitoring points, and SEA/SH risk mitigation measures embedded within contractor requirements and grievance pathways.

This hybrid NbS approach integrates soft engineering BTBs with ecosystem-based measures. The BTBs provide a first line of defence against storm wave energy, reducing overtopping and erosion in high-exposure segments. In doing so, they create more stable conditions that improve the establishment, survival, and long-term performance of vegetation-based interventions. The shoreline stabilization has added benefits of reducing erosion and sedimentation in coastal water, which will have positive impacts on coastal biodiversity—particularly for coral reefs. This combined approach builds on demonstrated experience from

the Tuvalu Coastal Adaptation Project (TCAP), where hybrid systems have proven more effective than stand-alone measures.

Sustained outcomes are secured through negotiated stewardship agreements that define roles, responsibilities, and maintenance routines, supported by training, tools, and locally managed teams (Output 2.1.2). Stewardship arrangements will seek equitable participation and access to paid or incentivised roles, including opportunities for women in nursery management, monitoring, maintenance coordination, and community awareness activities. These arrangements ensure that hybrid systems are maintained, vegetation is protected from degradation pressures (including invasive species and unsustainable use), and post-storm recovery is undertaken effectively. Through this integrated approach, the outcome not only reduces climate exposure by stabilising shorelines and limiting erosion and overtopping but also contributes to reduced land degradation by protecting soils and preventing salinisation, and to enhanced biodiversity through the restoration of native coastal vegetation and associated habitats. The result is a functioning coastal system that delivers multiple benefits, sustained through active local management and stewardship.

Component 3: Monitoring, learning, knowledge products and scaling M&E (incl. monitoring system, learning reviews, toolkit/replication products)

Outcome 3.1 strengthens adaptive management and enables replication by generating, structuring, and applying knowledge derived from implementation. This outcome establishes a practical, community-based monitoring framework designed for the Vaitupu context, using simple and locally manageable indicators such as shoreline change proxies, erosion hotspot tracking, vegetation survival and canopy development, ecosystem health, biodiversity indicators[2], water quality, maintenance effort logs, and structured community feedback. The system is co-developed and implemented with the Kaupule and community stakeholders, ensuring it is both technically credible and operationally sustainable. Importantly, this framework is designed not only to track project performance, but to serve as a long-term platform for ongoing monitoring and decision-making, embedding adaptive management within island-level governance systems. Monitoring and learning systems will include sex-disaggregated participation and benefit data, enabling adaptive management to address emerging gender gaps and ensure equitable outcomes over time. The project will further include an impact evaluation, seeking to further understand and evaluate evidence of what works, does not work, and why, as well as evaluating the durability of the benefits provided and risks of reversal. The impact valuation will be complemented by a cost-benefit analysis of the short- and long-term impacts of NbS to increase knowledge and understanding of the approaches and support the case for future investment.

These data and insights are systematically captured and translated through annual learning reviews that assess performance, identify what is working and where adjustments are needed, and inform iterative improvements to interventions and management practices. This process culminates in the development of a Tuvalu Atoll NbS/EbM Toolkit, which consolidates tested approaches into practical guidance, including design templates, indicative costing, operation and maintenance protocols, and safeguards considerations. By converting site-level experience into structured, accessible knowledge products and dissemination processes, the outcome ensures that lessons from Vaitupu are not lost, but instead support replication across other islands, strengthen national capacity for coastal management, and deliver the broader learning and knowledge management objectives required for GEF additionality.

B.3 Additionality and Global Environmental/Adaptation Benefits

The project delivers both direct climate adaptation benefits and Global Environmental Benefits (GEBs) by restoring and sustaining the natural coastal systems that underpin land stability and ecosystem function on Vaitupu. Through the rehabilitation of berm systems and coastal vegetation, the project reduces exposure of people, infrastructure, and land to wave-driven flooding, erosion, and salinisation, while simultaneously protecting soils and freshwater resources from degradation. These interventions enhance ecosystem services,

including sediment retention, coastal protection, and habitat provision, contributing to improved biodiversity outcomes and the maintenance of functional coastal ecosystems. By stabilising vulnerable shoreline segments and reducing degradation pressures, the project supports land degradation neutrality objectives while strengthening the resilience of both human and natural systems.

Without GEF support, NbS efforts on Vaitupu are likely to remain small-scale, opportunistic, and weakly integrated into island systems; implemented without the feasibility screening, technical design, stewardship arrangements, and monitoring required to deliver sustained risk reduction. The incremental value of GEF financing lies in addressing this "missing middle" of atoll adaptation: ensuring that interventions are technically sound and aligned with local geomorphic processes; embedding them within Kaupule-led governance and community stewardship systems that sustain performance over time; and establishing monitoring and knowledge products that convert implementation into replicable approaches. This additionality directly supports adaptation outcomes through reduced coastal exposure and improved shoreline stability, while also generating durable institutional capacity and decision-support systems that would not otherwise be established. Moreover, the use of hybrid NbS and integrated coastal zone management to generate adaptation benefits has direct positive impacts on biodiversity through both conservation and restoration of globally significant coastal ecosystems. GEF additionality also lies in enabling socially legitimate and inclusive adaptation systems that recognise differentiated vulnerabilities and strengthen women's participation in stewardship and decision-making—outcomes unlikely to emerge through fragmented shoreline works alone.

From a global environmental perspective, the project responds to a critical knowledge gap: how to design, implement, and sustain hybrid NbS approaches in extremely low-lying atoll environments where options are limited and climate pressures are intensifying. By generating evidence on the feasibility, performance, and limits of such approaches; including how engineered elements can be effectively sequenced with ecosystem-based measures; the project produces practical, transferable learning on what works, at what cost, and under which conditions. This has direct applicability across SIDS and other low-lying coastal regions facing similar constraints. In parallel, the project delivers global environmental co-benefits through the restoration and maintenance of coastal ecosystems, strengthening biodiversity, ecosystem services, and land stability, while reinforcing community stewardship of natural resources.

The projects biodiversity benefits have significance beyond Vaitupu itself. Atoll coastal ecosystems are globally rare, highly specialised, and among the ecosystems most threatened by climate change, with sea-level rise, ocean warming, and shoreline destabilisation placing increasing pressure on their ecological integrity and persistence. The project's ridge-to-reef (land–coast–lagoon–reef) landscape approach, integrating restoration of coastal berms, vegetation systems, and sediment processes, will enhance ecological integrity and reduce sedimentation, thereby improving habitat quality within the LMMA and surrounding reef systems. By restoring and sustaining coastal vegetation and berm-associated habitats, the project contributes to the conservation of ecosystem types that support distinctive biodiversity assemblages and critical ecological functions within the Pacific. Importantly, the project generates evidence on how biodiversity and ecosystem services can be maintained through hybrid adaptation approaches in highly climate-exposed atoll settings, helping to address a growing global challenge of conserving ecosystem function and resilience where conventional conservation and engineering responses alone may be insufficient.

Knowledge management and learning: how lessons will be captured and exchanged

The project is designed as both an implementation and learning investment, ensuring that site-level actions generate practical, transferable knowledge. It applies a structured, low-burden "learning-by-doing" cycle—baseline, implement, monitor, review, and adapt—supported by simple, standardised data collection and reporting processes suited to the outer-island context. Early in implementation, relevant lessons from Tuvalu and the wider Pacific are synthesised and translated into site selection criteria, feasibility screening, and design assumptions, ensuring that knowledge informs decisions from the outset. During implementation,

consistent templates and protocols are used to capture key information on site conditions, design choices, performance, maintenance effort, and costs, alongside simple monitoring indicators such as shoreline change proxies, vegetation condition, and stewardship activities.

Knowledge is consolidated through routine reporting and annual learning reviews that bring together Government counterparts, the Kaupule, and technical partners to validate findings and inform adaptive management. These processes feed into a set of targeted knowledge products, including annual monitoring and learning reports, practical case studies, and a Tuvalu Atoll NbS/EbM Toolkit with accompanying replication briefs. A light communication approach ensures that results are accessible to both community and national stakeholders, while dissemination through national and regional platforms enables uptake beyond Vaitupu. Through this approach, the project converts implementation experience into actionable guidance, supporting continuous improvement locally and enabling replication across other islands while meeting GEF requirements for structured knowledge management and global learning.

An indicative KM budget envelope of ~USD 250,000 will be financed primarily under component 3 (and complemented by PMC support), covering KM system setup (Year 1), monitoring implementation and learning reviews (Years 2–4), and production/dissemination of the toolkit and replication products (Years 3–4). This KM approach ensures that adaptation benefits endure through continuous improvement, and that VCAP delivers global value by generating replicable evidence for NbS/EbM delivery in atoll contexts.

Gender Equality and Women's Empowerment

A preliminary gender and socio-economic screening indicates that climate-driven coastal flooding/erosion and associated service disruptions can have gender-differentiated impacts on Vaitupu, largely because women and men often have different roles in household management, caregiving, community coordination, and use of coastal spaces and resources. During high-tide flooding, storm events, and access disruptions, women—especially pregnant women, older women, and women with disabilities—may face higher safety and mobility constraints when reaching health services, schools, or community meeting points, and may carry disproportionate burdens related to household recovery, caregiving, and water/food management. At the same time, women are frequently key actors in community organizations and can play a central role in stewardship and monitoring of NbS sites when participation barriers are reduced. The project therefore treats gender equality and women's empowerment as an operational requirement for effective and durable NbS outcomes, rather than a standalone activity.

Key gender-related risks identified at PIF stage include: (i) consultation processes that inadvertently privilege male voices or exclude women due to timing, cultural dynamics, or caregiving responsibilities; (ii) unequal distribution of paid roles/training opportunities within stewardship and maintenance teams; (iii) increased unpaid workload for women if stewardship expectations are not designed realistically; and (iv) safety risks, including potential SEA/SH risks, during field activities and contractor engagement. These risks can reduce local legitimacy and undermine the sustainability of interventions.

Opportunities to address gender gaps and promote women's empowerment include:

(i) ensuring women's meaningful influence over priority site selection and design choices (including safety and access considerations); (ii) creating paid or incentivized roles for women in nurseries, monitoring, community awareness, and maintenance scheduling; (iii) building women's leadership within community stewardship structures; and (iv) strengthening gender-responsive governance through Kaupule-led arrangements that recognize different needs and constraints across the community.

Gender Action Plan (GAP) – indicative measures at PIF stage (to be finalized during PPG)

During PPG, UNDP and Government counterparts will complete a **project-specific gender analysis** (including consultations with women's groups, youth and persons with disabilities) and finalize a Gender Action Plan. At PIF stage, the following gender-responsive measures are proposed:

1. Inclusive consultation and decision-making
   - Hold targeted women's focus groups (and mixed sessions) at times/venues that reduce barriers (e.g., childcare-friendly scheduling; accessible venues).
   - Track participation and influence (not only attendance) and validate workshop outputs with women's groups before finalizing priority sites and stewardship rules.
2. Equitable access to benefits and opportunities
   - Ensure women's equitable access to paid roles (nursery operations, monitoring teams, stewardship coordinators) and to training (technical, monitoring, leadership).
   - Provide practical enablers (transport stipends, childcare support where feasible, and accessible training formats).
3. Gender-responsive technical design and implementation
   - Integrate safety and accessibility considerations into site selection and stewardship rules (e.g., safe access routes to NbS sites, safe working practices, accessible monitoring points).
   - Embed SEA/SH prevention measures in contractor ToRs and codes of conduct, with grievance pathways.
4. Monitoring, learning and adaptive management
   - Collect sex-disaggregated data for all relevant participation and capacity indicators; use learning reviews to adjust approaches if women's participation/benefits fall below targets.

Gender-sensitive indicators and sex-disaggregated targets (PIF-level)

The project Results Framework will include gender-responsive actions and the following indicators/targets (refined during PPG):

Participation and capacity
- % women among people trained in NbS stewardship/O&M/monitoring: ≥40% (minimum)
- # women in leadership roles in stewardship groups (chair/co-chair/monitoring lead): at least 1 per group
- Consultation quality
- # targeted consultation sessions with women's groups (and feedback validation): minimum 2 per key milestone (site selection; post-design validation)

Benefits
- *People benefiting from GEF-financed investments (sex-disaggregated):* to be confirmed at PPG; reported as F/M based on verified beneficiary mapping and local population data
- Safeguards

- SEA/SH risk mitigation measures included in contracts and grievance mechanism operational: Yes (100%) of relevant service/works contracts

These measures ensure that gender differences, risks, and opportunities are addressed directly through project implementation mechanisms and that the project can credibly report gender-responsive results consistent with GEF policy requirements.

During the next phase of project design (PPG Phase), the findings form the gender analysis will be used to develop a detailed gender action plan (GAP), which will in turn provide inputs into the project result framework, including gender-specific indicators. Key elements of the GAP will also be integrated directly into the project components. The

final proposal all also include measures to facilitate and support the implementation of the GAP (e.g., budgets, regular monitoring, adaptive management); with gender targets and results fully integrated into PIRs, MTRs and TE.

[1] The specific species to be used for coastal vegetation rehabilitation will be assessed during the PPG phase, drawing lessons from TCAP to identify species that offer a combination of biodiversity and coastal protection benefits.

[2] Biodiversity indicators may include species richness, invasive species presence, habitat connectivity, status of fish nursery habitats etc.

Coordination and Cooperation with Ongoing Initiatives and Project.

Does the GEF Agency expect to play an execution role on this project?

No

If so, please describe that role here. Also, please add a short explanation to describe cooperation with ongoing initiatives and projects, including potential for co-location and/or sharing of expertise/staffing

To be determined. The project will be implemented by the Ministry of Home Affairs, Climate Change and Environment serving as the national Executing Entity. However, based on initial discussions with the national partners and experience on previous projects, it is likely that UNDP will provide targeted implementation support under UNDP's Country Office Support to National Implementation Modality (COS-NIM). Under COS-NIM, the Government retains full ownership and decision-making authority over project execution, ensuring alignment with national policies and island governance systems (including Kaupule and Falekaupule processes in Vaitupu, and development partners), while UNDP provides fiduciary oversight, procurement services, safeguards compliance, and technical backstopping. While this modality has been consistently applied in Tuvalu to balance strong country ownership with the practical constraints of small island contexts—particularly limited in-country capacity for complex procurement, financial management, and reporting to vertical funds—further assessment will be conducted as project development progresses to confirm the need and refine the specifics of such support. By combining national leadership with UNDP's operational support, COS-NIM enables efficient delivery, effective information sharing, compliance with GEF requirements, and progressive capacity strengthening within government systems, while ensuring that implementation remains responsive to local priorities and institutional arrangements.

B.4 Coordination and Cooperation with Ongoing Initiatives and Project.

The project will be delivered in close synergy with a portfolio of ongoing and planned coastal adaptation, climate resilience, and long-term development initiatives in Tuvalu. This coordinated approach ensures complementarity, avoids duplication, and maximizes the value of existing investments, technical knowledge, and institutional processes across national and regional programmes.

Several initiatives provide the baseline context upon which VCAP will build. These include the Tuvalu Coastal Adaptation Project (TCAP), which has established a strong technical and institutional foundation for coastal resilience through hazard modelling, LiDAR datasets, engineering design, and implementation experience in Funafuti, Nanumea, and Nanumaga. VCAP will draw directly from TCAP's coastal hazard assessments, shoreline analysis, and lessons learned regarding berm-top barriers (BTBs), reclamation sequencing, and hybrid coastal protection approaches. Additional baseline support is provided through the Tuvalu National Adaptation Plan (NAP), the National Climate Change Policy 2021–2030, and the Te Kete

National Development Strategy, which collectively define national adaptation priorities, resilience objectives, and institutional coordination frameworks.

VCAP will also align with broader adaptation planning efforts currently underway, including the Tuvalu Climate Long-Term Adaptation Planning (Tu-CLAP) process. These initiatives contribute long-term spatial planning, climate risk analysis, and infrastructure transition scenarios that help position VCAP within a broader national adaptation pathway. Through this alignment, VCAP will function both as an immediate resilience investment for Vaitupu and as a pilot for scalable outer-island adaptation models under government leadership.

Complementary synergies also exist with sectoral and regional programmes. Ongoing initiatives related to water security, disaster risk reduction, community preparedness, ecosystem management, and governance strengthening provide critical inputs in terms of climate information, institutional capacity, and community engagement that reinforce VCAP outcomes. This includes drawing lessons from previous GEF-supported projects, including the ongoing 'Ecosystem based adaptation for improved livelihood in Tuvalu' project, which aims to reduce vulnerability to climate change through adaptive agricultural practices and ecosystem management in Tuvalu. While this project is not targeting Vaitupu, lessons for will be generated for ecosystem management in similar small island contexts in Tuvalu.

Regional Pacific resilience initiatives and donor-supported climate adaptation programmes further offer opportunities for knowledge exchange, technical collaboration, and replication of successful coastal adaptation practices across Small Island Developing States (SIDS).

At the regional level, the project will coordinate with technical agencies such as the Secretariat of the Pacific Community (SPC) and other regional partners supporting coastal management, ecosystem-based adaptation, and climate services (for example the GCF supported regional initiate Enhancing Climate Information and Knowledge Services for resilience in 5 island countries of the Pacific Ocean). VCAP will draw on regional knowledge products, best practices, and technical assistance, particularly in relation to nature-based solutions (NbS), coastal vegetation restoration, and community-based adaptation.

VCAP will also align with and contribute to key national frameworks, including the National Adaptation Plan (NAP), the National Climate Change Policy (2021–2030), the updated Nationally Determined Contribution (NDC, 2022), and the Te Kete National Development Strategy (2021–2030). This alignment ensures that project interventions are embedded within broader national priorities for climate resilience, ecosystem management, and sustainable development.

Synergies will also be pursued with other donor-supported initiatives, including those financed by DFAT, the Green Climate Fund (GCF), and multilateral development banks, to ensure a coherent and programmatic approach to coastal adaptation in Tuvalu. In particular, VCAP is positioned to complement larger-scale infrastructure investments by focusing on low-regret, scalable NbS and bioengineering interventions, which can enhance the performance and longevity of existing and future coastal protection measures.

At the local level, strong coordination will be maintained with the Kaupule (island council) and community stakeholders in Vaitupu to ensure that interventions are fully aligned with local priorities, land tenure systems, and traditional knowledge. This will be facilitated through structured stakeholder engagement processes and integration with existing community-based initiatives. It is essential that coastal adaptation is grounded in Vaitupu's specific atoll geomorphology, where storm-built berm systems, narrow land margins, limited logistics, and Kaupule/Falekaupule governance structures shape what is technically feasible, socially acceptable, and maintainable over time.

Through this cooperative and nationally led framework, VCAP will strengthen the impact of baseline adaptation investments, reduce climate vulnerability in Vaitupu, and generate scalable lessons for outer-island resilience. The

project positions coastal adaptation not as an isolated intervention, but as part of a long-term, nationally coordinated resilience pathway that integrates engineering solutions, ecosystem stabilization, governance systems, and community-based adaptation.

Core Indicators

Indicator 1 Terrestrial protected areas created or under improved management

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0	0	0	0

Indicator 1.1 Terrestrial Protected Areas Newly created

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0	0	0	0

Name of the Protected Area	WDPA ID	IUCN Category	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)

Indicator 1.2 Terrestrial Protected Areas Under improved Management effectiveness

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
0	0	0	0

Name of the Protected Area	WDPA ID	IUCN Category	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)	METT score (Baseline at CEO Endorsement)	METT score (Achieved at MTR)	METT score (Achieved at TE)
		Others							

Indicator 2 Marine protected areas created or under improved management

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
22	0	0	0

Indicator 2.1 Marine Protected Areas Newly created

Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
22	0	0	0

Name of the Protected Area	WDPA ID	IUCN Category	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
Vaitupu Locally Managed Marine Area	555547865	Others	22.00			

Indicator 2.2 Marine Protected Areas Under improved management effectiveness

Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
0	0	0	0

Name of the Protected Area	WDPA ID	IUCN Category	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)	METT score (Baseline at CEO Endorsement)	METT score (Achieved at MTR)	METT score (Achieved at TE)

Indicator 3 Area of land and ecosystems under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
20	0	0	0

Indicator 3.1 Area of degraded agricultural lands under restoration

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 3.2 Area of forest and forest land under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
20.00			

Indicator 3.3 Area of natural grass and woodland under restoration

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 3.4 Area of wetlands (including estuaries, mangroves) under restoration

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
35	0	0	0

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
35.00			

Indicator 4.2 Area of landscapes under third-party certification incorporating biodiversity considerations

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.4 Area of High Conservation Value or other forest loss avoided

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.5 Terrestrial OECMs supported

Name of the OECMs	WDPA-ID	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)

Documents (Document(s) that justifies the HCVF)

Title

Indicator 5 Area of marine habitat under improved practices to benefit biodiversity (excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
35.00			

Indicator 5.1 Fisheries under third-party certification incorporating biodiversity considerations

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

Type/name of the third-party certification

Indicator 5.2 Large Marine Ecosystems with reduced pollution and hypoxia

Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)

LME at PIF	LME at CEO Endorsement	LME at MTR	LME at TE

Indicator 5.3 Marine OECMs supported

Name of the OECMs	WDPA-ID	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)

Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	600			
Male	600			
Total	**1200**	**0**	0	**0**

Explain the methodological approach and underlying logic to justify target levels for Core and Sub-Indicators (max. 250 words, approximately 1/2 page)

Targets at PIF stage are evidence-led, proportional to the USD 5M envelope, and explicitly tied to the project's implementation architecture (3–4 priority sites; three components; Kaupule-led stewardship; annual learning reviews).

- Core Indicator (CI) 1 accounts for a locally managed protected area (22ha) that will be under improved management through capacity development support to local leaderships.
- CI 3 considers an estimated range of 15–25 ha rehabilitation/restoration is derived from mapping treated segments and applying verified average effective buffer widths (e.g., vegetated belt and mangrove footprint), with overlaps removed; a conservative midpoint of 20ha was selected as the indicator target. This accounts for 2.5–3.5 km of shoreline that was considered a realistic treatment length across a limited number of priority coastal segments where NbS is feasible and maintainable.
- CI 4 targets account for wider stewardship, maintenance zones, protection zones, and improved shoreline management practices.
- CI 5 reflects nearshore lagoon and reef-edge areas benefiting from sediment stabilization and vegetation rehabilitation.
- LDCF indicator 2 covers treated shoreline influence zones, stewardship areas, vegetation buffers, and management areas – with target areas overlapping with those of CI 4.
- LDCF indicator 3 reflects the revised Island Strategic Plan for Vaitupu
- LDCF indicator 4 reflects the planned team structure (community maintenance/monitoring groups plus government/Kaupule focal points) , and will be verified through training logs, endorsed stewardship agreements, and adoption of O&M plans.
- LDCF indicator 5 reflects local contractors, suppliers, transport/logistics operators, or nursery providers supporting implementation.
- Beneficiary targets (CI 11 and LDCF 1) considered direct reduced exposure for households/users in influence zones of treated segments. Sex disaggregation used 2022 census data which showed an equal split between males and females on Vaitupu.

Biophysical targets will be confirmed during PPG using participatory site selection, baseline assessments (rapid geomorphology, sediment/hydrology screening, ecosystem condition), and GIS mapping of agreed intervention polygons.

META INFORMATION – LDCF

LDCF **true**	SCCF-B (Window B) on technology transfer **false**	SCCF-A (Window-A) on climate Change adaptation **false**
Is this project LDCF SCCF challenge program?		

false

This Project involves at least one small island developing State(SIDS).

true

This Project involves at least one fragile and conflict affected state.

true

This Project will provide direct adaptation benefits to the private sector.

false

This Project is explicitly related to the formulation and/or implementation of national adaptation plans (NAPs).

false

This project will collaborate with activities begin supported by other adaptation funds. If yes, please select below

Green Climate Fund	Adaptation Fund	Pilot Program for Climate Resilience (PPCR)
false	**false**	**false**

This Project has an urban focus.

true

This project will directly engage local communities in project design and implementation

true

This project will support South-South knowledge exchange

true

This Project covers the following sector(s)[the total should be 100%]: *

Agriculture	0.00%
Nature-based management	0.00%
Climate information services	0.00%
Coastal zone management	80.00%
Water resources management	0.00%
Disaster risk management	20.00%
Other infrastructure	0.00%
Tourism	0.00%
Health	0.00%
Other (Please specify comments)	0.00%
Total	100.00%

This Project targets the following Climate change Exacerbated/introduced challenges:*

Sea level rise	Change in mean temperature	Increased climatic variability	Natural hazards
true	**false**	**true**	**true**

Land degradation	Coastal and/or Coral reef degradation	Groundwater quality/quantity
true	**true**	**false**

CORE INDICATORS – LDCF

	Total	Male	Female	% for Women
CORE INDICATOR 1 Total number of direct beneficiaries	1200	600.00	600.00	50.00%
CORE INDICATOR 2				

(a) Area of land managed for climate resilience (ha) (b) Coastal and marine area managed for climate resilience (ha)	20.00 35.00			
CORE INDICATOR 3 Number of policies/plans/ frameworks/institutions for to strengthen climate adaptation	1.00			
CORE INDICATOR 4 Number of people trained or with awareness raised	120	90.00	30.00	25.00%
CORE INDICATOR 5 Number of private sector enterprises engaged in climate change adaptation and resilience	3.00			

Key Risks

	Rating	Explanation of risk and mitigation measures
CONTEXT		
Climate	Moderate	Risk: Extreme weather events (cyclones, storm surge, prolonged inundation) may disrupt implementation, damage newly established vegetation, and reduce early performance of NbS measures. Mitigation: Interventions will be seasonally scheduled, site designs will incorporate local exposure conditions, and contingency measures will include rapid repair, replanting protocols, and phased establishment of vegetation systems.
Environmental and Social	Moderate	Risk: Unintended environmental impacts, including disturbance of sensitive coastal habitats or introduction/spread of invasive species, may arise during implementation. Mitigation: Environmental screening will be applied during site selection and design, with safeguards integrated into implementation, including invasive species management protocols, use of native species, and routine monitoring to identify and address emerging issues.
Political and Governance	Low	Risk: Changes in local leadership or shifting priorities within Kaupule structures may affect continuity of engagement and stewardship commitments. Mitigation: Agreements and processes will be formalised at institutional level, with broad community involvement, documentation of roles and responsibilities, and alignment with national frameworks to ensure continuity beyond individual leadership changes.
INNOVATION		
Institutional and Policy	Moderate	Risk: Delays or limited uptake in formalising and institutionalising hybrid NbS approaches within island planning, governance, and stewardship systems may reduce the effectiveness and scalability of interventions, particularly where new roles, coordination mechanisms, or standards are being introduced across Kaupule and national actors. Mitigation: The project will anchor all institutional changes within existing governance structures and policy frameworks, working through the Kaupule and established national coordination mechanisms rather than creating parallel systems. Processes will

		be co-developed with stakeholders through inclusive consultations, ensuring alignment with local practices and decision-making norms. Practical, easy-to-apply tools (e.g. SOPs, planning templates, stewardship agreements) will be developed and tested through implementation, allowing iterative refinement and building ownership. Regular coordination and learning reviews will support uptake, while embedding these approaches into island planning processes will strengthen continuity beyond the project. Risk: Competing land-use pressures or local access concerns may affect intervention sites. Mitigation: Participatory site selection, local validation, clear boundaries, and negotiated stewardship agreements will be used before implementation.
Technological	Moderate	Risk: Low survival or weak performance of mangrove and vegetation-based interventions due to poor site selection, hydrological mismatch, or unsuitable ecological conditions. Mitigation: A hydrology-first and site suitability approach will be applied before planting, including pilot plots, technical screening, adaptive species selection, and staged implementation before larger rollout.
Financial and Business Model	Moderate	Risk: Fluctuations in costs of materials, transport, and logistics may affect implementation timelines and scope, particularly in remote island settings Mitigation: Designs will prioritise locally available materials and labour where feasible, with cost contingencies built into planning and phased implementation allowing flexibility to adjust to changing conditions.
EXECUTION		
Capacity	Moderate	Risk: Weak institutional coordination between island and national actors may slow implementation or reduce scaling potential. Mitigation: Coordination mechanisms will be embedded through regular technical review, government engagement, and alignment with national adaptation planning processes. Risk: Limited long-term maintenance or declining community participation may reduce sustainability of ecosystem-based interventions. Mitigation: Clear stewardship arrangements will be established through the Kaupule and local groups, supported by training, practical maintenance tools, simple responsibilities, and periodic follow-up.
Fiduciary	Low	Risk: Limited local procurement capacity and administrative constraints may delay contracting and delivery of materials and services. Mitigation: Procurement processes will be planned early, with support from implementing partners, use of standardised templates, and where appropriate, engagement of pre-qualified suppliers and local contractors to streamline delivery.
Stakeholder	Moderate	Risk: Consultation gaps or insufficient inclusion of women, youth, persons with disabilities, or vulnerable groups may reduce ownership and generate grievances. Mitigation: Inclusive consultation formats will be applied during project preparation (PPG phase) and implementation, including targeted focus groups and practical participation measures to ensure broad local representation and grievance access. This process will be underpinned by an inclusive engagement during the PPG phase to identify the specific needs of vulnerable groups, which will inform not only the implementation strategy, but

		lso the design of the project's stakeholder engagement plan to ensure effective ongoing engagements throughout implementation.
Other	Low	Risk: Limited evidence generated during implementation may weaken replication potential. Mitigation: Monitoring and annual adaptive learning reviews will be built into project implementation, with simple indicators and practical documentation requirements.
Overall Risk Rating	Moderate	The project risk profile is considered moderate, with principal risks related to climatic uncertainty, ecological performance, and long-term stewardship; however, all identified risks can be reduced through phased implementation, technical screening, inclusive governance, and adaptive monitoring.

C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES

Describe how the proposed interventions are aligned with GEF- 8 programming strategies and country and regional priorities, including how these country strategies and plans relate to the multilateral environmental agreements.

Confirm if any country policies that might contradict with intended outcomes of the project have been identified, and how the project will address this.

For projects aiming to generate biodiversity benefits (regardless of what the source of the resources is - i.e., BD, CC or LD), please identify which of the 23 targets of the Kunming-Montreal Global Biodiversity Framework the project contributes to and explain how. (max. 500 words, approximately 1 page)

The project is strongly aligned with the climate change adaptation objectives as defined in the Least Developed Countries Fund (LDCF) programming priorities on reducing climate vulnerability and strengthening adaptive capacity in SIDS through integrated, risk-informed approaches. Specifically, the project contributes to:

i) CCA 1: Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation and LDCF Priority Theme 3: Nature-based solutions. The project will contribute through the restoration of coastal ecosystems as functioning NbS buffers that reduce exposure of communities and assets.
ii) CCA 2: Mainstream climate change adaptation and resilience for systemic impact and LDCF Lever of Transformation 2: Strengthened governance for adaptation. The project will contribute by embedding stewardship, operations and maintenance systems, and inclusive governance mechanisms.
iii) CCA 3: Foster enabling conditions for effective and integrated climate change adaptation. The project will contribute through the integration of hybrid NbS approaches into island-level planning, technical design, and coordination systems.
iv) LDCF Priority Area 3: Fostering partnership for inclusion & whole-of-society approach. The project will contribute to building partnerships and enhancing participatory process with local organizations and stakeholders through active engagement with Kaupule and Falekaupule
v) Lever of Transformation 3: Knowledge exchange and collaboration. The project will contributes by generating, structuring, and applying knowledge derived from implementation

In parallel, the project aligns with the GEF-8 Land Degradation (LD) focal area, contributing to LD Objective 1: Avoid, reduce and reverse land degradation and LD Objective 2: Increase resilience of production systems and landscapes. These are operationalised through LD-2 (area of degraded land restored) and LD-1

(landscapes under improved management practices), as the project rehabilitates degraded coastal berm systems and vegetation, stabilises shorelines, and reduces erosion and salinisation in vulnerable atoll environments.

The project also supports the GEF-8 Biodiversity (BD) focal area, contributing to BD Objective 1: Improve the conservation status of ecosystems and species and BD Objective 2: Mainstream biodiversity across sectors and seascapes. These are reflected in BD-1 (area of ecosystems under improved management) through the restoration and stewardship of coastal ecosystems, and BD-4 (mainstreaming biodiversity into planning and governance) through the integration of ecosystem-based approaches into island planning, coastal protection systems, and community management arrangements. By strengthening ecosystem services such as habitat provision, sediment regulation, and coastal protection, the project supports both biodiversity conservation and the resilience of coupled human–natural systems.

Across these focal areas, the project demonstrates strong complementarity between adaptation outcomes and global environmental benefits, linking reduced climate risk (CCA) with measurable improvements in ecosystem condition and land stability (LD and BD), and ensuring that results are both locally relevant and globally reportable.

At the national level, VCAP is designed to operationalise Tuvalu's national climate policy framework — including Te Kaniva, the National Strategic Action Plan (NSAP), and the National Adaptation Plan (NAP) — by translating established priorities into implementable, island-scale action. While these frameworks emphasise integration of climate risk into planning, strengthened Kaupule-led governance, and improved use of data for decision-making, a key constraint remains the effective delivery of these priorities on the ground. The project addresses this gap by embedding hybrid coastal protection within island planning systems, strengthening local capacity, and establishing practical tools and processes for consistent prioritisation, design, implementation, and maintenance. In doing so, it moves from policy intent to sustained practice, protecting communities, critical services, and access routes while reinforcing coordination between island and national systems.

The project establishes an island-tested model for credible hybrid NbS in atoll contexts, based on feasibility-led site selection, designs aligned with berm and ecosystem dynamics, and clearly defined stewardship and maintenance systems. By formalising roles, strengthening coordination, and embedding monitoring and adaptive management within Kaupule systems, it reinforces policy coherence while making implementation actionable and durable. This model is inherently scalable, with templates, costing ranges, and replication pathways that can inform future NAP-aligned investments and larger financing windows, contributing to a strengthened national system for coastal adaptation. In parallel, the project supports Tuvalu's commitments under multilateral environmental agreements, including the United Nations Framework Convention on Climate Change and the Paris Agreement through enhanced climate resilience, as well as the Convention on Biological Diversity by restoring and sustaining coastal ecosystem functions. Where coastal vegetation systems are rehabilitated, it also contributes to wetland and coastal conservation objectives consistent with Ramsar Convention on Wetlands principles, strengthening ecosystem services and biodiversity outcomes. Alignment with the Convention on Biological Diversity is further strengthened through direct contributions to the targets of the Kunming–Montreal Global Biodiversity Framework (GBF), as outlined below:

- Target 2 (Ecosystem restoration): restoring/rehabilitating priority coastal ecosystems (mangroves where suitable; dune/coastal vegetation systems) and improving their protective functions.
- Target 8 (Reduce climate impacts on biodiversity): increasing ecosystem resilience through EbM, monitoring and adaptive management in a climate-stressed atoll environment.
- Target 11 (Ecosystem services): strengthening coastal protection services (erosion reduction, wave attenuation, shoreline stability) that reduce risk to people and assets.

- Target 14 (Mainstream biodiversity): integrating NbS guidance, standards and lessons into local adaptation planning and future investment packages.

- Targets 22 and 23 (Inclusive participation and gender): embedding Kaupule leadership and inclusive engagement (women, youth, persons with disabilities) in site selection, stewardship and monitoring to sustain outcomes over time.

Potential policy contradictions: No specific national policy contradictions have been identified at PIF stage; however, the project recognizes potential *tensions* between near-term development pressures (e.g., siting of infrastructure, coastal land-use decisions, shoreline modification) and the long-term integrity of NbS sites. The project will address this through early participatory mapping and site validation, Kaupule-endorsed stewardship arrangements, safeguards screening, and coordination mechanisms that ensure NbS areas are reflected in local planning and decision-making and do not conflict with priority development needs.

D. POLICY REQUIREMENTS

Gender Equality and Women's Empowerment:

We confirm that gender dimensions relevant to the project have been addressed as per GEF Policy and are clearly articulated in the Project Description (Section B).

Yes

Stakeholder Engagement

We confirm that key stakeholders were consulted during PIF development as required per GEF policy, their relevant roles to project outcomes and plan to develop a Stakeholder Engagement Plan before CEO endorsement has been clearly articulated in the Project Description (Section B).

Yes

Were the following stakeholders consulted during project identification phase:

Indigenous Peoples and Local Communities: Yes

Civil Society Organizations: Yes

Private Sector: No

Provide a brief summary and list of names and dates of consultations

The mission successfully convened national and island-level[1][8] stakeholders on the 25th of March 2026 to validate the VCAP problem analysis and confirm that wave-driven flooding/overtopping, coastal erosion, and shoreline instability are the priority climate risks affecting Vaitupu's communities, critical infrastructure, and key access routes. Stakeholders agreed that these hazards are already causing recurrent disruption to daily life and services and are expected to intensify under sea-level rise and more damaging storm and wave conditions. The consultation also reinforced that adaptation decisions must be made in a highly constrained atoll environment, where limited land availability and narrow coastal corridors increase the consequences of even

localized failures. The results of these consultations were used to identify priority needs, which when combined with expert analysis, were used to develop the intervention strategy and confirm priority sites for implementation. Further engagement is planned for the PPG phase of the project, which will include targeted consultations with vulnerable groups, including women, youth and people with disabilities, to better understand there individual needs and ensure a fully inclusive implementation and engagement strategy.

[1] National stakeholders included Ministry of Finance, Climate Change/Environment

Local stakeholders included Vaitupu Kaupule, community island leaders, local chief

(Please upload to the portal documents tab any stakeholder engagement plan or assessments that have been done during the PIF development phase.)

Private Sector

Will there be private sector engagement in the project?

Yes

And if so, has its role been described and justified in the section B project description?

Yes

Environmental and Social Safeguard (ESS) Risks

We confirm that we have provided indicative information regarding Environmental and Social risks associated with the proposed project or program and any measures to address such risks and impacts (this information should be presented in Annex D).

Yes

Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate			

E. OTHER REQUIREMENTS

Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described in the Project Description (Section B)

Yes

ANNEX A: FINANCING TABLES

GEF Financing Table

Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	GEF Project Grant($)	Agency Fee($)	Total GEF Financing ($)
UNDP	GET	Tuvalu	Land Degradation	LD STAR Allocation: LD-2	Grant	77,324.00	7,346.00	84,670.00
UNDP	GET	Tuvalu	Biodiversity	BD STAR Allocation: BD-1	Grant	1,349,863.00	128,237.00	1,478,100.00
UNDP	LDCF	Tuvalu	Climate Change	LDCF Country allocation	Grant	2,914,699.00	276,896.00	3,191,595.00
UNDP	GET	Tuvalu	Climate Change	CC STAR Allocation: CCM-1-4	Grant	74,324.00	7,061.00	81,385.00
Total GEF Resources ($)						**4,416,210.00**	**419,540.00**	**4,835,750.00**

Project Preparation Grant (PPG)

Is Project Preparation Grant requested?

true

PPG Amount ($)

150000

PPG Agency Fee ($)

14250

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	PPG($)	Agency Fee($)	Total PPG Funding($)
UNDP	GET	Tuvalu	Biodiversity	BD STAR Allocation: BD-1	Grant	20,000.00	1,900.00	21,900.00
UNDP	GET	Tuvalu	Land Degradation	LD STAR Allocation: LD-2	Grant	14,000.00	1,330.00	15,330.00
UNDP	LDCF	Tuvalu	Climate Change	LDCF Country allocation	Grant	99,000.00	9,405.00	108,405.00
UNDP	GET	Tuvalu	Climate Change	CC STAR Allocation: CCM-1-4	Grant	17,000.00	1,615.00	18,615.00
Total PPG Amount ($)						**150,000.00**	**14,250.00**	**164,250.00**

Please provide justification

Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total($)
UNDP	GET	Tuvalu	Biodiversity	BD STAR Allocation	1,500,000.00
UNDP	GET	Tuvalu	Land Degradation	LD STAR Allocation	100,000.00
UNDP	GET	Tuvalu	Climate Change	CC STAR Allocation	100,000.00
Total GEF Resources					**1,700,000.00**

Indicative Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing($)	Co-financing($)
BD-1-1	GET	1,349,863.00	2748000
LD-2	GET	77,324.00	916000
CCM-1-4	GET	74,324.00	916000
CCA-1-1	LDCF	2,914,699.00	6870000
Total Project Cost		**4,416,210.00**	**11,450,000.00**

Indicative Co-financing

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	Ministry of Home Affairs, Climate Change and Environment	In-kind	Recurrent expenditures	400000
Recipient Country Government	PWD, Lands & Survey, Environment Dept.	In-kind	Recurrent expenditures	350000
GEF Agency	UNDP	In-kind	Recurrent expenditures	250000
Donor Agency	TCAP (non-GEF components – DFAT / GCF portions only)	In-kind	Recurrent expenditures	1500000

Donor Agency	Tu-CLAP (planning, feasibility, due diligence) DFAT	In-kind	Recurrent expenditures	500000
GEF Agency	World Bank – Climate & Disaster Resilience Programme	Grant	Investment mobilized	2000000
GEF Agency	World Bank – Previous Resilience Financing	Grant	Investment mobilized	2500000
GEF Agency	ADB – Coastal / Urban Infrastructure Investments	Grant	Investment mobilized	2000000
GEF Agency	ADB / WB – Maritime & Outer Island Infrastructure	Grant	Investment mobilized	1000000
Donor Agency	DFAT – Infrastructure / Resilience Investments	Grant	Investment mobilized	800000
Civil Society Organization	Kaupule / Community Contributions	In-kind	Recurrent expenditures	150000
Total Co-financing				**11,450,000.00**

Describe how any "Investment Mobilized" was identified

Description of investment mobilized:

- World Bank – Climate & Disaster Resilience Programme: An existing programme supporting climate-resilient infrastructure, disaster risk reduction, and institutional strengthening in Tuvalu, which aligns closely with the project by reinforcing national and island-level efforts to strengthen coastal resilience and climate adaptation capacity.
- World Bank – Previous Resilience Financing: Resilience-focused investments in critical infrastructure and climate adaptation measures in Tuvalu, providing an enabling foundation and co-benefits that reinforce the project's objectives for long-term coastal protection and community resilience.
- Asian Development Bank – Coastal / Urban Infrastructure Investments: Finances climate-resilient coastal protection, drainage, and urban resilience infrastructure improvements that align with the project by reducing vulnerability to coastal hazards and supporting integrated shoreline management approaches and climate-resilient infrastructure development.
- Asian Development Bank / World Bank – Maritime & Outer Island Infrastructure: Ongoing investments in maritime connectivity and outer island infrastructure that supports transport connectivity, maritime access, and outer island infrastructure resilience, complementing the project through improved climate-resilient service delivery and strengthened adaptive capacity of remote island communities.
- Department of Foreign Affairs and Trade – Infrastructure / Resilience Investments: Supports resilient public infrastructure, service delivery systems, and climate adaptation initiatives in Tuvalu, aligning with the project by strengthening the broader enabling environment for sustainable and climate-resilient island development.

ANNEX B: ENDORSEMENTS

GEF Agency(ies) Certification

GEF Agency Type	Name	Date	Project Contact Person	Phone	Email
GEF Agency Coordinator	Nancy Bennet	5/15/2026	Director, Quality and Impact Hub and Executive Coordinator, Vertical Funds		nancy.bennet@undp.org
Project Coordinator	Karma Lodey Rapten	5/15/2026	Regional Technical Specialist		karma.rapten@undp.org

Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):

Name	Position	Ministry	Date (MM/DD/YYYY)
Pepetua Latasi	Permanent Secretary	Ministry of Home Affairs, Climate Change, and Environment	5/11/2026

ANNEX C: PROJECT LOCATION

Please provide geo-referenced information and map where the project interventions will take place

ANNEX D: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING

(PIF level) Attach agency safeguard screen form including rating of risk types and overall risk rating.

Title
GEF-8_PIF_Tuvalu_VCAP_pre SESP Final_clean_25May2026

ANNEX E: RIO MARKERS

Climate Change Mitigation	Climate Change Adaptation	Biodiversity	Land Degradation
No Contribution 0	Principal Objective 2	Principal Objective 2	No Contribution 0

ANNEX F: TAXONOMY WORKSHEET

Level 1	Level 2	Level 3	Level 4
☒ Influencing models			
	☐ Transform policy and regulatory environments		
	☒ Strengthen institutional capacity and decision-making		
	☒ Convene multi-stakeholder alliances		
	☒ Demonstrate innovative approaches		
	☐ Deploy innovative financial instruments		
☒ Stakeholders			
	☐ Indigenous Peoples		
	☒ Private Sector		
		☐ Capital providers	
		☐ Financial intermediaries and market facilitators	
		☐ Large corporations	
		☒ SMEs	
		☒ Individuals/Entrepreneurs	
		☐ Non-Grant Pilot	
		☐ Project Reflow	
	☒ Beneficiaries		
	☒ Local Communities		
	☒ Civil Society		
		☒ Community Based Organization	
		☒ Non-Governmental Organization	
		☐ Academia	
		☐ Trade Unions and Workers Unions	
	☒ Type of Engagement		
		☒ Information Dissemination	
		☐ Partnership	
		☒ Consultation	
		☒ Participation	
	☒ Communications		
		☒ Awareness Raising	
		☐ Education	
		☐ Public Campaigns	
		☒ Behavior Change	
☒ Capacity, Knowledge and Research			
	☐ Enabling Activities		
	☒ Capacity Development		
	☒ Knowledge Generation and Exchange		
	☐ Targeted Research		
	☒ Learning		
		☒ Theory of Change	
		☒ Adaptive Management	
		☒ Indicators to Measure Change	
	☒ Innovation		
	☒ Knowledge and Learning		
		☒ Knowledge Management	
		☒ Innovation	
		☒ Capacity Development	
		☒ Learning	
	☒ Stakeholder Engagement Plan		
☒ Gender Equality			
	☒ Gender Mainstreaming		
		☒ Beneficiaries	
		☒ Women groups	
		☒ Sex-disaggregated indicators	
		☒ Gender-sensitive indicators	
	☒ Gender results areas		
		☐ Access and control over natural resources	
		☒ Participation and leadership	

	☒ Access to benefits and services ☒ Capacity development	
	☒ Awareness raising ☐ Knowledge generation	
☒ **Focal Areas/Theme**		
☒ **Biodiversity**		
	☒ Protected Areas and Landscapes	
		☐ Terrestrial Protected Areas
		☐ Coastal and Marine Protected Areas
		☐ Productive Landscapes
		☐ Productive Seascapes
		☒ Community Based Natural Resource Management
	☒ Mainstreaming	
		☐ Extractive Industries (oil, gas, mining) ☐ Forestry (Including HCVF and REDD+)
		☐ Tourism
		☐ Agriculture & agrobiodiversity
		☐ Fisheries
		☒ Infrastructure
		☐ Certification (National Standards)
		☐ Certification (International Standards)
	☐ Species	
		☐ Illegal Wildlife Trade
		☐ Threatened Species
		☐ Wildlife for Sustainable Development
		☐ Crop Wild Relatives
		☐ Plant Genetic Resources
		☐ Animal Genetic Resources
		☐ Livestock Wild Relatives
		☐ Invasive Alien Species (IAS)
	☐ Biomes	
		☐ Mangroves
		☐ Coral Reefs
		☐ Sea Grasses
		☐ Wetlands
		☐ Rivers
		☐ Lakes
		☐ Tropical Rain Forests
		☐ Tropical Dry Forests
		☐ Temperate Forests
		☐ Grasslands
		☐ Paramo
		☐ Desert
	☐ Financial and Accounting	
		☐ Payment for Ecosystem Services
		☐ Natural Capital Assessment and Accounting
		☐ Conservation Trust Funds
		☐ Conservation Finance
	☐ Supplementary Protocol to the CBD	
		☐ Biosafety
		☐ Access to Genetic Resources Benefit Sharing
☐ **Forests**		
	☐ Forest and Landscape Restoration	
	☐ Forest	☐ REDD/REDD+
		☐ Amazon ☐ Congo
		☐ Other Critical Forest Biomes ☐ Drylands
☒ **Land Degradation**		
	☒ Sustainable Land Management	
		☒ Restoration and Rehabilitation of Degraded Lands
		☒ Ecosystem Approach

		☒ Integrated and Cross-sectoral approach
		☐ Community-Based NRM
		☐ Sustainable Livelihoods
		☐ Income Generating Activities
		☐ Sustainable Agriculture
		☐ Sustainable Pasture Management
		☐ Sustainable Forest/Woodland Management
		☐ Improved Soil and Water Management Techniques
		☐ Sustainable Fire Management
		☐ Drought Mitigation/Early Warning
	☐ Land Degradation Neutrality	
		☐ Land Productivity
		☐ Land Cover and Land cover change
		☐ Carbon stocks above or below ground
	☐ Food Security	
☐ **International Waters**		
	☐ Ship	
	☐ Coastal	
	☐ Freshwater	
		☐ Aquifer
		☐ River Basin ☐ Lake Basin
	☐ Learning	
	☐ Fisheries	
	☐ Persistent toxic substances ☐ SIDS : Small Island Dev States	
	☐ Targeted Research ☐ Pollution	
		☐ Persistent toxic substances ☐ Plastics
		☐ Nutrient pollution from all sectors except wastewater
		☐ Nutrient pollution from Wastewater
	☐ Transboundary Diagnostic Analysis and Strategic Action Plan preparation	
	☐ Strategic Action Plan Implementation	
	☐ Areas Beyond National Jurisdiction	
	☐ Large Marine Ecosystems	
	☐ Private Sector	
	☐ Aquaculture ☐ Marine Protected Area	
	☐ Biomes	
		☐ Mangrove
		☐ Coral Reefs
		☐ Seagrasses
		☐ Polar Ecosystems
		☐ Constructed Wetlands
☐ **Chemicals and Waste**		
	☐ Mercury	
	☐ Artisanal and Scale Gold Mining	
	☐ Coal Fired Power Plants	
	☐ Coal Fired Industrial Boilers	
	☐ Cement	
	☐ Non-Ferrous Metals Production	
	☐ Ozone	
	☐ Persistent Organic Pollutants	
	☐ Unintentional Persistent Organic Pollutants	
	☐ Sound Management of chemicals and Waste	
	☐ Waste Management	
		☐ Hazardous Waste Management
		☐ Industrial Waste
		☐ e-Waste
	☐ Emissions	
	☐ Disposal	

		☐ New Persistent Organic Pollutants ☐ Polychlorinated Biphenyls	
		☐ Plastics	
		☐ Eco-Efficiency	
		☐ Pesticides	
		☐ DDT - Vector Management	
		☐ DDT - Other	
		☐ Industrial Emissions	
		☐ Open Burning	
		☐ Best Available Technology / Best Environmental Practices	
		☐ Green Chemistry	
	☒ **Climate Change**		
		☒ **Climate Change Adaptation**	
			☒ Climate Finance
			☒ Least Developed Countries
			☐ Small Island Developing States ☒ Disaster Risk Management
			☒ Sea-level rise
			☒ Climate Resilience
			☐ Climate information
			☒ Ecosystem-based Adaptation
			☐ Adaptation Tech Transfer
			☐ National Adaptation Programme of Action
			☐ National Adaptation Plan
			☐ Mainstreaming Adaptation
			☐ Private Sector
			☒ Innovation
			☒ Complementarity
			☒ Community-based Adaptation
			☐ Livelihoods
		☐ **Climate Change Mitigation**	
			☐ Agriculture, Forestry, and other Land Use
			☐ Energy Efficiency
			☐ Sustainable Urban Systems and Transport
			☐ Technology Transfer
			☐ Renewable Energy
			☐ Financing
			☐ Enabling Activities
		☐ **Technology Transfer**	
			☐ Poznan Strategic Programme on Technology Transfer
			☐ Climate Technology Centre & Network (CTCN)
			☐ Endogenous technology
			☐ Technology Needs Assessment
			☐ Adaptation Tech Transfer
		☒ **United Nations Framework on Climate Change**	
			☒ Nationally Determined Contribution