



# Kingdom of Tonga

## Ridge to Reef Strategic Action Framework 2022 – 2030



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## Ridge to Reef Strategic Action Framework 2022 – 2030

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# Abbreviations

<b>CSO</b>	Civil Society Organisation
<b>GEF</b>	Global Environment Facility
<b>IDA</b>	Island Diagnostic Analysis
<b>IW</b>	International Waters
<b>KPI</b>	Key Performance Indicator
<b>MEIDECC</b>	Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications
<b>MLNR</b>	Ministry of Lands and Natural Resources
<b>MoF</b>	Ministry of Finance
<b>NGO</b>	Non-governmental Organisation
<b>PSC</b>	Public Service Commission
<b>R2R</b>	Ridge-to-Reef
<b>RapCA</b>	Rapid Assessment of Priority Coastal Areas
<b>RPCU</b>	Regional Programme Coordination Unit
<b>SDG</b>	Sustainable Development Goal
<b>SMA</b>	Special Management Area
<b>SPC</b>	Pacific Community
<b>TWG</b>	Technical Working Group
<b>VEPA</b>	Vava'u Environmental Protection Association

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The IWR2R Tonga project is implemented through the Ministry of Lands and Natural Resources with dedication, guidance and support from the Chief Executive Officer, Rosamond Bing, and project manager, Silia Leger. The IWR2R technical support team was instrumental in the development of the State of Coasts and Diagnostic Analysis reports, and included Sesimani Lokotui (Civil Society), Amanda Le'ota (Ministry of Fisheries), Tu'amelie Fusimalohi (Department of Environment, MEIDECC), Nikolasi Heni (Ministry of Lands and Natural Resources) and project management unit team, Kilisitina Moala, Angelic Pale, Heide Muller and Lutolofi Taunisila.



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# Executive Summary

The Pacific Regional International Waters Ridge to Reef project is funded by the Global Environment Facility and executed by the Geoscience, Energy and Maritime Division, Pacific Community (SPC) based in Suva, Fiji. The Ministry of Lands and Natural Resources is the lead host agency of the project in Tonga and has a dedicated project management unit. The project commenced in 2017.

In 2017, the Tonga IWR2R project selected Hihifo District as its demonstration site and implemented several project activities. This includes the conservation in Tongatapu of over 300 hectares of coastal habitats including mangroves, seagrass, and fringing coral reefs through the support of the special management area (SMA) with Kanokupolu community and Ministry of Fisheries. The Rapid Assessment of Priority Coastal Areas (RapCA) assessed the ecological and biological status of coastal species, habitats, and water quality surveys (Stone et al. 2021a). These surveys were conducted in partnership with the Ministry of Lands and Natural Resources, Ministry of Fisheries and Department of Environment, VEPA and national consultants.

In 2021, the IWR2R project completed several workshops and consultations to provide diagnostic analysis for the Hihifo district, Tongatapu and through local and technical knowledge for the whole of Tonga (Stone et al. 2021b). Over 20 participants representing relevant government line ministries, private sector, civil society, and community leaders were consulted. The participants identified and evaluated the environmental and social impacts being faced by communities, sectors, and economic development, both at the demonstration site level and across the whole Kingdom.

Furthermore, the diagnostic workshops also covered discussion on priority policy approaches, alignment and needs, which directly respond to priority environmental concerns and their root-causes as identified by workshop participants. These analyses and outcomes from diagnostic workshops provide the basis for formulating the State of Coast (Stone et al. 2022), as well, captured here in the Strategic Action Framework.

The priority challenges identified through the diagnostic workshops included pollution through waste management for both liquid and solid waste, water quality and water resources and exploitation of resources, in particular marine resources. Governance and policy reform and realignment were identified as action reforms necessary for ensuring that innovative and adaptive measures have the political support and will need to be effective and sustainable. Closer collaboration and working with community-based solutions and leadership is necessary for the pilot and long-term activities to be successful, and increasing support between the line ministries, private sector and communities is needed to ensure that everyone is working to the same practices and outcomes that improve the ecological and social impacts.

The coastal habitats and marine species and resources are under pressure from overuse, unsustainable practices, pollution, and loss of habitat from development. In addition to this are the increasing impacts to environmental resilience and social activities from climate change.

Developing a strategic action framework for continuing ridge to reef activities and state of coast workflow needs to ensure that inclusive and holistic approaches are implemented to engage and align everyone to the needed processes. The following are the key objectives of the strategic action plan:

## KPI 1

To mainstream ridge to reef processes and objectives to national planning and frameworks through political realignment and inclusion.

## KPI 2

Water resource management to be a priority in Tonga through land-use planning and community led programmes.

## KPI 3

Strengthen knowledge-based initiatives and communication on coastal areas, ecological process, cultural knowledge, water resources and climate change.

## KPI 4

Partnerships and community driven approaches to be a focal point of integrated, holistic, and adaptable processes.

These key programme indicators are expanded into activities for implementation between 2022 and 2030 with estimated budgets provided.

# Introduction

## Overview

The Pacific Regional International Waters Ridge to Reef project is funded through the Global Environment Facility and executed by the Pacific Community (SPC) based in Suva, Fiji through the Regional Project Coordination Unit and the Geoscience, Energy and Maritime Division.

Within Tonga, the IWR2R project is implemented by a project management unit through the Ministry of Lands and Natural Resources. The five-year programme implemented watershed and conservation activities in the Hihifo district in Tongatapu from 2017 to 2021. The outcomes included:

- Conservation of 300 hectares of mangroves, seagrass beds, intertidal mudflats, and fringing coral reefs within the Kanokupolu Special Management Area;
- Reduction in liquid waste pollution through composting toilets and sand/coconut husk filtering of waste and septic water in Hihifo;
- Support of the development of the Hihifo Youth Council, including training on financial and grant management;
- Ecological, biological, and social surveys for rapid assessment of the Hihifo district;
- Development of the Island Diagnostic Analysis through stakeholder workshops; and
- Development of the State of Coasts report.

Water resource and coastal management need consistent and strategic actions across platforms and stakeholders that will enhance the activities and objectives of both single sector programmes and ridge to reef components.

## Background

Tonga is a small island big ocean state, within the western central Pacific region, consisting of approximately 169 raised limestone, volcanic or mixed geology islands (Spennemann 2004)<sup>1</sup>.

The population of over 100,000 is split between the four island groups of Tongatapu and 'Eua, Ha'apai, Vava'u and Niuatoputapu and Niufo'ou with 70% of the population based in Tongatapu. The land mass of Tonga is small at 747 km<sup>2</sup> across the four island groups with dense populations living near or directly on the coastal areas.

Freshwater resources on the islands are from freshwater lenses which form when rainwater seeps through the porous limestone and volcanic rock and collects in layers of freshwater that rest upon the denser seawater in caverns and natural holes. This water is pumped to the surface and distributed to the communities. With low-lying islands and climate change impacts through sea level rise and increased drought periods, the freshwater lenses can easily be over pumped and increase the salinity to households.

Subsistence and livelihood activities, economic demand and climate change are all impacting on the environmental health and biodiversity of Tonga, with environmental decline increasing social impacts for communities.

Coastal biodiversity and habitats are heavily impacted by liquid and solid waste management, with water quality decreasing in densely populated areas (Lokotui 2021)<sup>2</sup>. Overfishing and unsustainable harvesting have depleted the near-shore resources over the last few decades, however the implementation of community-based management by the Ministry of Fisheries has increased the success of fisheries management to these coastal communities. Land-based issues such as pollution, infrastructure development and resource extraction through sand mining continue to impact on these managed coastal resources.

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1 Spennemann D. R. 2004. The June 1847 Eruption of Fonualei Volcano, Tonga. An Historical Analysis. 196. Charles Sturt University. <http://csusap.csu.edu.au/%7Edspennem/ReportStore/JCReport196.pdf>.

2 Lokotui S. 2021. Coastal Water Quality Assessment Report: Rapid Assessment of Priority Coastal Areas, Hihifo, Tongatapu, Kingdom of Tonga.

Earthquakes and tropical cyclones incur on average of US\$15.5 million per year in Tonga (World Bank, 2011)<sup>3</sup> and this is expected to increase in the next 50 years if climate change is considered (Government of Tonga 2018)<sup>4</sup>. Climate change has seen the increase in frequency and strength of cyclones in the last six years with Tongatapu, 'Eua and Ha'apai being impacted by category four and five tropical cyclones (Ian, Gita and Harold) between 2015 and 2021.

To build a more resilient and adaptable future for Tonga, integrated, holistic approaches need to be incorporated and shared between actors such as government ministries, community, NGO/CSOs and private sector. This aligns with the values of R2R processes and engages broader than single-sector approaches. Communication needs to be clear and purposeful.

## Consultations

The IWR2R Tonga project engaged and consulted with technical specialists from private sector, community and government ministries in Tongatapu and Vava'u, the consultations focused on identifying strengths and weaknesses of the current management and legislative frameworks for R2R and coastal management in Tonga.

In addition, to the workshops, the consultants conducted independent interviews with the project management unit, IWR2R programme and technical working committee to understand and support the development of this strategic action framework.

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3 World Bank. 2011. PCRAFI Country Risk Profile for Tonga. September. <http://documents.worldbank.org/curated/en/846521468190741310/pdf/96756-BRIBox391446B-PUBLIC-Tonga.pdf>

4 Government of Tonga. 2018. Post Disaster Rapid Assessment. Accessible in: [https://www.gfdrr.org/sites/default/files/publication/WB\\_Tonga\\_Report\\_FA02\\_Medium\\_0.pdf](https://www.gfdrr.org/sites/default/files/publication/WB_Tonga_Report_FA02_Medium_0.pdf)

# Strategic Action Framework for strengthening R2R

## Vision

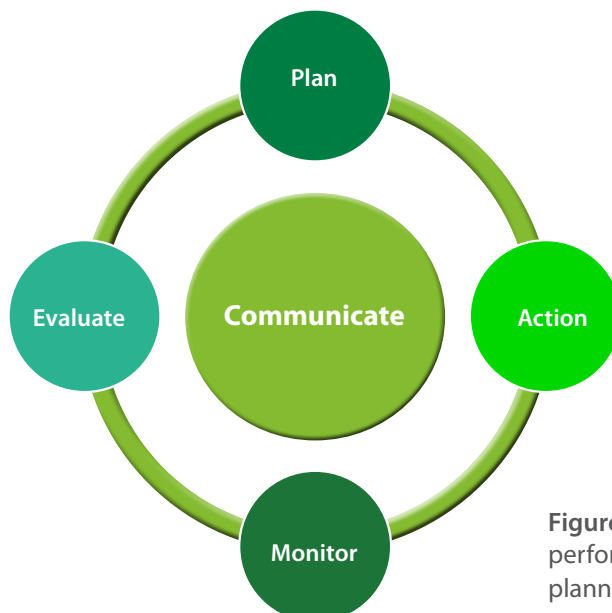
By 2030, Ridge to Reef processes and objectives will be mainstreamed in national policy, frameworks, development activities and community led initiatives to ensure that water resources, environmental and social stability are the priority for a resilient Tonga.

## Values

To ensure that all stakeholders are engaged in the R2R mainstreaming process through shared values, goals and activities that enable a cooperating mechanism. These values below are the result of the workshops and discussions for the Island Diagnostic Analysis (IDA) and State of Coast programme under the IWR2R and align with the Tonga Sustainable Development Framework – TSDF II 2018-2025:

- Ensure transparent and efficient governance mechanisms and policy reform that supports holistic and innovative nature-based solutions to resource management that encourage resilient and adaptive approaches to climate change impacts.
- Traditional and cultural knowledge is integral to environmental management, biodiversity conservation and encourages sustainable traditional methods.
- Women and youth are critical in the pathway to sustaining and improving coastal water resources and biodiversity.
- Utilise evidence-based management, including best available science, traditional and cultural knowledge and integrated approaches that encompass the connections between the land and sea, nature, and people.
- Work collaboratively and strengthen engagement with civil society (CSOs), non-governmental organisations (NGOs) and private sector.
- Maintain regional partnerships, ensure knowledge transfer of information, capacity building and outcomes.
- Maintain and support academic institutions in Tonga to provide technical and tertiary training on coastal management and water resources.

To ensure these values are maintained, the core process (Figure 1) will be the instrumental component of conducting and fulfilling the strategic action plan. Communication across project management and government ministries and ensuring the inclusion of all stakeholders provides a platform for progress.



**Figure 1:** Process for ensuring that values and key performance indicators are incorporated through planning, acting, monitoring, and evaluating.

# Key R2R Project Initiatives

The overarching key project initiatives are designed to support and enhance the government's commitments nationally and internationally, including the Sustainable Development Goals and Convention on Biological Diversity. The key performance indicators (KPI) are designed to be implemented in line with the 2030 SDG targets and government commitments and to be holistic, inclusive, and innovative.

## KPI 1: To mainstream ridge to reef processes and objectives in national plans and frameworks through political realignment and inclusion.

Ensuring that nature based, holistic and adaptive resource management programmes are integral to the goals and objectives of the TSDF III. Promote good governance that supports the importance of biodiversity and environment in the sustainable social and economic activities in Tonga.

A toolkit for the State of Coast and R2R activities is the primary output for KPI1. This toolkit would include Ministerial briefings, media briefings, private sector, community and NGO/CSO engagement and communication materials.

## KPI 2: Prioritising water resource management in Tonga through land-use planning and community led programmes.

Currently, water resource and environmental management are not a whole of Tonga priority; yet social and economic development relies heavily on the balance of a sustainable and useable environment and resilient communities. Successful programmes such as minimising pollution (e.g., resulting from animal and human waste), and the Special Management Areas need to be replicated for community management of freshwater resources and other coastal areas.

Key activities would be to develop national indicators through land use planning for water resource management across partnerships and sectors, ensure community is not only engaged but leading activities that support and strengthen pollution free underground and surface waters, livelihood, and economic activities.

Further innovative solutions need to be implemented that balance ecological, social, and economic impacts and promote inclusive and adaptive ways forward, including demographic and geographical situations throughout Tonga and ensuring that priority actions are implemented in the outer island districts of Ha'apai, Eua, Vava'u and Niuaus.

These proposed solutions need to be consulted on and expanded through feasibility surveys to ensure that ownership and political will is maintained. Examples of innovative solutions are included in the tables below.

## KPI 3: Strengthen knowledge-based initiatives and communication on coastal areas, ecological processes, cultural knowledge, water resources and climate change.

Adaptive and holistic management approaches can create a more sustainable and resourceful intervention to addressing ecological issues. For instance, leadership and communal cooperation can be committed from governance and community driven systems to share knowledge and ensure that all actors are engaged.

## KPI 4: Partnerships and community driven approaches to be a focal point of integrated, holistic, and adaptable processes.

Implementing financing mechanisms that support and provide broader engagement and initiatives through improved access to resources and ensuring a critical path in sustaining partnerships.

The following tables outline the activities identified to achieve the key programme indicators as mentioned above. The tables outline some of the resource needs and provisional budget recommendations for conducting activities, while Appendix 1 shows the total proposed budget, including project management staffing for eight years (2022–2030).

Table 1: Mainstream ridge to reef processes and objectives in national planning and frameworks for national support on coastal and water resource management.

Activity	Lead	Indicators	Assumptions/Risk	Resource needs/outputs	Estimated Budget (US\$)	Timeframe
<b>National planning and management to address and identify R2R processes for Tonga Strategic Development Framework III</b>	MLNR/PM Office	State of Coast and State of Environment Reports to incorporate high-level overarching strategies for future goals and national objectives Amendments and review of relevant legislations as informed by new technical and scientific analyses and results Implementation of projects directly linked to issues of coastal and water resources (levels of reduction in pollution levels, area of biodiversity sustainably used and managed)	Acknowledgement of the issues to coastal and water resources  Ongoing support for the review and preparation of State of Coast and State of Environment Reports, which incorporate high level strategies for future goals and national objectives Support for ongoing technical and scientific assessments and monitoring on water quality and biodiversity status	<ul style="list-style-type: none"> <li>• Consultation</li> <li>• Awareness materials (posters, brochures)</li> <li>• State of Coast Report</li> <li>• State of Environment Report</li> </ul>	25,000	2022–2024
<b>Ministerial retreat and induction to the current environmental status and R2R frameworks that highlight sectoral approaches</b>	MLNR/MoF/MEIDECC	High level acknowledgement of links from environmental and social impacts to development and economic goals.	Knowledge at all levels is necessary to ensure that ecosystem-based management and community driven initiatives are supported and there is engagement from within the Tonga Parliament	<ul style="list-style-type: none"> <li>• Toolkit of summaries on issues, best practices, and adaptations</li> <li>• Retreat with Ministers (detailed minutes and actions made available)</li> </ul>	10,000	2022–2023
<b>Develop and implement governance reforms and policy guidance for community led R2R initiatives</b>		Community driven approaches to benefit from knowledge on current policy and sectoral approaches [number of communities governance structures supported] Support for district and youth council development towards ecosystem-based management to reduce indirect social impacts [number of districts and youth councils supported]	Community driven approaches are critical to support R2R implementation, clear policy guidance is needed for community adaptation and best practices scenario Support from communities, districts, and youth councils.	<ul style="list-style-type: none"> <li>• Communication toolkit<sup>5</sup> for policy, programmes, and best practices</li> <li>• Monitoring and evaluation</li> <li>• Increase in number of environmental impact assessments conducted for development</li> </ul>	20,000	2 years 2023–2024

- 5 Communication Toolkit to include
- Information for media, private sector, and community on issues, best practices, and discussion topics
  - Policy manual on overarching guidance for frameworks and legislations
  - Standards for coastal development especially for septic, liquid, and solid waste management
  - Land-use planning as an integrated, holistic approach to coastal and water resource management

Activity	Lead	Indicators	Assumptions/Risk	Resource needs/outputs	Estimated Budget (US\$)	Timeframe
Training and knowledge component in the Public Service Commission (PSC) manual on links between environmental and social impacts	PSC/MLNR/ R2R TWG	Public Service commission trains new Government staff and annually meets with civil servants	Public Service commission trains new Government staff and annually meets with civil servants Sharing of knowledge and basics of environment issues, sustainable development and R2R processes to mainstream within the civil servants	<ul style="list-style-type: none"> <li>State of coast and environmental reports</li> <li>Workshop and training with PSC on delivering topics</li> <li>Training manual</li> <li>Quarterly bulletin on current issues and activities</li> <li>Monitoring and evaluation</li> <li>Workshop and training reports detailing results and recommendations for future training.</li> </ul>	15,000	2 years 2022–2023
R2R technical working group (TWG)	MLNR	Cross sectoral and adaptable approaches are to be beneficial from a cultural and resource/biodiversity benefit	Natural resources, fisheries, environment, NGOs, community, and private sector engagement to overview and formalise working structure Formalisation of TWG under National Environment and Climate Change Committee, sub support groups in outer islands (Eua, Ha'apai, Vava'u and Niuaus)	<ul style="list-style-type: none"> <li>Administrative resources</li> <li>Training resources</li> <li>Fieldwork resources</li> <li>Monitoring and evaluation</li> </ul>	35,000	7 years 2022–2030

Table 2: Prioritising water resource and waste management in Tonga through land-use planning, CSO/NGOs and community initiatives that are innovative and inclusive.

Activity	Lead	Indicator	Assumption/Risk	Resource Needs/outcomes	Estimated Budget (US\$)	Timeframe
Land-use planning framework to be communicated and implemented across Tonga	PUMA/ MLNR R2R TWG	Indicator assessments to identify processes that support R2R sustainable development Alignment of policy and sector plans to land-use planning priorities	Spatial land use plan broad scale, district plans more intricate Basis is Hihifo RapCA results and Island Diagnostic Analysis Watershed catchment SMAs, critical components to social and environmental risks and allowances for economic development	<ul style="list-style-type: none"> <li>Draft regulations for National Spatial Planning Act</li> <li>Pilot project for district-based land use planning in 3 island groups</li> <li>Monitoring and evaluation</li> </ul>	25,000  85,000	3 years 2023–2025  7 years 2023–2029
Indicators should be identified to fit the capacity of national engagement and to identify training outputs	R2R TWG/ Statistics dept.	Indicator approaches provide systematic data collection across stakeholder approaches. Cultural and traditional knowledge needs to be an included indicator.	Align sectoral approaches to R2R to broaden concepts of ecosystem-based approaches with immediate impacts (SMAs, IWCM, IWRM, MSP). Social impacts need to be inclusive of non-economic activities	<ul style="list-style-type: none"> <li>Develop national indicators that are inclusive and cross cutting</li> <li>Training on indicators</li> <li>Data portal</li> <li>Data input to national frameworks</li> <li>Monitoring and evaluation</li> </ul>	85,000	5 years 2023–2028
Develop feasibility studies and pilot activities for water resource management and reduction of pollution and support the land use planning and consultations	R2R TWG NGO/CSO Community	At least 2 pilot activities designed and implemented for improving water quality, including outer island groups  At least 2 pilot programmes implemented for reducing illegal dumping solid waste management on coastal habitats, including outer islands	Solutions for water quality to include filtering and management of storm and household water  Support business development and small, medium enterprise schemes for reducing single use plastics and encouraging domestic manufactured products and local economy	<ul style="list-style-type: none"> <li>Water quality to improve through reduction in point source pollution across rural communities through filtering programmes and improvement in stormwater management</li> <li>Pollution, including solid and liquid waste, to be reduced through strengthening use of locally based products and technology and reducing import reliance on single use plastics</li> </ul>	50,000  50,000	2 years  2 years
Knowledge based training	R2R TWG CSO/NGOs	Training and endorsement of community based R2R ambassadors within youth and women's groups	Broaden training protocols and indicators that support monitoring and evaluation of management and encourages community driven approaches	<ul style="list-style-type: none"> <li>Integrated training approaches</li> <li>Training workshop report detailing outputs and recommendations in moving forward detailing future needs (and possible knowledge gaps to address in future workshops/training).</li> </ul>		Ongoing



Table 3: Strengthen knowledge-based initiatives and school curriculum on coastal areas, ecological processes, cultural knowledge, water resources and climate change

Activity	Lead	Indicator	Assumption/risks	Resource/outcomes	Budget (US\$)	Timeframe
Ensure syllabus incorporates R2R components including water and coastal resources, benefits of environment health to social capacity	Ministry of Education and Training	Students' recognition of cross-cutting issues	Engage high school students in off campus field session to support and strengthen community driven approaches	<ul style="list-style-type: none"> <li>• Consultation</li> <li>• Monitoring and evaluation</li> <li>• Simple survey reports as baseline and towards end of 2-year timeframe to monitor students' recognition and to measure effectiveness of incorporation of R2R components into syllabus.</li> </ul>	25,000	2 years 2023–2025
Gap analysis for training and knowledge-based learning	MLNR/CSOs/ MET	Development of manual for knowledge-based learning systems	Emerging technologies and culture are critical and may have different needs	<ul style="list-style-type: none"> <li>• Consultant</li> <li>• Monitoring and evaluation</li> </ul>	35,000	One year 2023–2024

Table 4: Partnerships and community driven approaches to be the focal point of innovative, integrated, holistic and adaptable processes.

Activity	Lead	Indicator	Assumption/risks	Resource/outputs	Budget (US\$)	Timeframe
<b>Develop partnership with private sector</b>	R2R TWG Ministry of Tourism Tourism Authority	Private sector us engaged and has a better understanding of the role between environment and economy. Private sector has better engagement in national planning	Private sector has misused resources for economic gain (sand mining, water access), improving partnerships and understanding is a key indicator of communication.	<ul style="list-style-type: none"> <li>Best practices and guidelines for private sector (green standard awards)</li> <li>Workshops (production of workshop reports- detailed discussions)</li> <li>Monitoring and evaluation</li> </ul>	20,000	2023–2025
<b>Community driven approaches need to be empowered and resources through the land use planning and ownership of the plan (fit with disaster risk management plans)</b>	R2R TWG CSO/NGO District councils	Training can be supplemented by youth groups from successful districts for close engagement and sharing of knowledge 2-way communication is strengthened and supported	Guidelines on R2R practices and ways of implementation Youth and district councils can play important roles for both community and high-level engagement Provide support to elected officials but managed independently	<ul style="list-style-type: none"> <li>Management training and guidelines from policy to action</li> <li>Developing a knowledge platform for stakeholder to engage with for information</li> <li>Monitoring and evaluation</li> </ul>	65,000	7 years 2023–2030
<b>Implement nature-based solutions to support conservation of biodiversity and sustaining of ecosystem services</b>	R2R TWG Community NGO/CSO	At least 4 activities for conservation of biodiversity and protection of ecosystem services including reduction and exploitation of species Increase protection and inclusion of mangroves, seagrass, and coral reefs to SMAs and coastal management programmes	Increase in planting and protection of native species including terrestrial coastal flora and mangroves. Implement pollution mitigation (filtering) to sensitive coastal habitats including seagrass beds	<ul style="list-style-type: none"> <li>Increase number of communities participating throughout Tonga</li> <li>Strengthen ecological benefits of SMA programme through land management</li> </ul>	50,000	3 years 2023–2026
<b>Sustainable financing mechanisms</b>	Ministry of Finance R2R TWG Regional organisations Small grants programme	Community, private sector and NGO/CSO have ability to resource project activities	Financial mechanisms and management activities (similar to Tonga Health/Climate Change Trust Fund) Support for informal business in tourism, community based and driven (SMAs)	<ul style="list-style-type: none"> <li>Workshops</li> <li>Gap analysis on financial mechanisms and access</li> <li>Training</li> <li>Support programme</li> <li>Monitoring and evaluation</li> </ul>	20,000	3 years 2023–2026

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