

Tonga: Summary of activities for outputs 1 and 3

- Output 1: Impact analysis to strengthen national strategic planning**
- Output 3: Scale up resilient development measures in specific sectors**



Repairing the boat ramp in front of Kanokupolu in 2023 after the 2022 tsunami

Tonga timeline January 2019 – June 2023

Output 1: Impact analysis to strengthen national strategic planning	
February 2021	National consultant commences
September 2022	Testing of the full methodology on coastal protection measures on the north coast of Tongatapu completed and Impact snapshot published
November 2022	A team from Tonga participated in the Applied training in impact analysis (iA) and the impacts database held in Fiji
Planning and KRA 4: Coordination	
March 2019	Presentation of GCCA+ SUPA project at an Inception Meeting in Fiji attended by a representative from Tonga
June 2019	1st consultation with Government agencies and NGOs
June 2019	Concept note approved
August 2019	2nd consultation with government agencies, NGOs and community representatives
December 2019	PDD signed
May 2020	Project National Coordinator and Finance Assistant started
July 2020	PDD Amendment 1 signed
December 2020	PDD Amendment 2 signed
June 2021	PDD Amendment 3 signed
KRA 1: Conduct a coastal assessment, feasibility, and conceptual design study for coastal protection along the entire north coast of Tongatapu (Niutoua to Ha’atafu)	
December 2020	Desktop assessment completed for coastal protection along the north coast of Tongatapu, Tonga (Niutoua to Ha’atafu and including the Fanga’uta Lagoon).
March 2021	Conceptual design and preliminary costing, including community consultations , for coastal protection along the north coast of Tongatapu completed (version 1)
August 2021	Detailed design of selected small-scale coastal protection measures completed (version 1)
December 2021	Environmental impact assessment of small-scale selected measures completed
January 2022	Eruption of the Hunga Tonga Ha’apai underwater volcano, and tsunami event
May 2022	Revised design of selected small-scale coastal protection measures since the January tsunami, completed (version 2)
June 2023	Conceptual design and preliminary costing , for coastal protection along the north coast of Tongatapu following the 2022 tsunami revised (version 2); and published in October 2023
KRA 2: Implement small-scale coastal protection and ecosystem-based measures in northwest Tongatapu (Sopu to Ha’atafu)	
September 2022	Commencement of remedial coastal protection measures (reconstruction of rock revetment and repair of non-return valves) in Kanokupolu
September 2022	Oversight engineer contracted to monitor progress of remedial works in Kanokupolu
March 2023	Six public warning signs at six selected communities - Sopu, Puke, Fatai, Nukunuku, Te’ekiu and Masilamea constructed in northwest Tongatapu advising residents and beach users of the dangers of coastal flooding
June 2023	Construction of remedial measures in Kanokupolu completed
June 2023	More than 8,000 mangrove/coastal vegetation seedlings were planted over 30 hectares of coastal land in northwestern Tongatapu by schools, community groups and government agencies
June 2023	A mangrove/coastal vegetation nursery was established in Hihifo and an agreement is in place for Nukunuku youth group to maintain the nursery.
KRA 3: Enhance awareness about the impact of climate change and natural disasters in Tonga	

September 2020/2021/2022	Climate change awareness week activities , including clean-up activities, tree planting, video competitions for youth and other activities
June 2021	Training for youth groups on mangroves and climate resilience , mangrove planting and proposal writing completed
August 2021	Training on community leadership for town officers and other local government officers completed
May 2022	Talanoa session with youth and elders to discuss traditional knowledge and climate resilience
June 2022	Stand-alone server system for the Tonga Climate Change Portal delivered and installed at Department of Climate Change
June 2023	A video was prepared on “Scaling up coastal protection in Tonga 2014 to 2023”

Tonga highlights

The Kingdom of Tonga is a constitutional monarchy and is located in the central South Pacific and it lies between 15° and 23°S and 173° and 177°W. Tonga has a land area of 649 km² and is an archipelago of 172 coral and volcanic islands of which 36 are inhabited. Tonga consists of four main island groups: (1) Tongatapu and 'Eua in the south, (2) Ha'apai in the middle, (3) Vava'u in the north and (4) Niuafu'ou and Niuva Toputapu in the far north. The population of Tonga is 101,436 (2016 census). Tonga has a small economy that is heavily reliant on foreign aid and remittances from Tongans living and working overseas. This narrow range of employment and income streams makes Tonga economically vulnerable to changes in the country's physical environment, including those related to climate change.

The project used a consultative and people centred approach to (i) conduct an impact analysis of past coastal protection measures on the north coast of Tongatapu; and (ii) plan and implement hard and soft coastal engineering protection measures for the communities on the northern coast of Tongatapu.

Highlights output 1

Tonga was one of the four countries to trial the extended version of the impact analysis methodology. This was carried out by consultants. The past projects selected for analysis focused on coastal protection at: (i) Ahau, northwestern Tongatapu, that was supported by the Pacific Adaptation to Climate Change Plus, and (ii) at Talao'ou and Makaunga, northeastern Tongatapu that was supported by the GCCA: PSIS project.

The following are the output 1 highlights in Tonga.

- The main implementing partner for the iA was a local consultant.
- The trial of the extended version of the impact analysis methodology was conducted over a 20-month period starting in February 2021 and included research into past projects, data collection, GIS mapping and field trials of the methodology.
- The final snapshot impact analysis report was published in September 2022 and showed the Ahau project received a scoring of “medium (positive) impact”, 1.75 out of a total of 4 and the Talao'ou and Makaunga project received a scoring of “medium (positive) impact”, 1.9 out of a total of 4.
- Tonga featured in one of the Practice Learning Sessions conducted between June and August 2022 and shared the context and results of their activities in outputs 1 and 3.

Highlights output 3

The Government of Tonga selected the coastal protection sector as their focus for output 3. The overall objective was for a holistic approach to coastal protection in northern Tongatapu to be adopted by the government. The specific objective of the project was to better equip communities to undertake small-

scale coastal protection measures (hard and soft engineering). The project had four KRAs: (1) Conduct a coastal assessment, feasibility, and conceptual design study for coastal protection along the entire north coast of Tongatapu (Niutoua to Ha'atafu); (2) Implement small-scale coastal protection and ecosystem-based measures in northwest Tongatapu (Sopu to Ha'atafu); (3) Enhance awareness about the impact of climate change and natural disasters in Tonga; (4): Coordination of Projects.

The following are the output 3 highlights in Tonga:

- The GCCA+SUPA project was presented to the countries at an Inception Meeting in Fiji in March 2019. Following this and after two consultations, Tonga selected coastal protection as the focus sector and the north coast of Tongatapu as the project site.
- The main implementing partner was the Climate Change Department in the Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications.
- The “Conceptual design and preliminary costing for coastal protection along the north coast of Tongatapu” was finalised and published in 2023. This was first prepared in 2021 and then revised after the January 2022 tsunami. It represents a comprehensive foundation for use by potential donors wishing to assist Tonga’s post-tsunami and coastal protection efforts.
- A 1.35km long coastal revetment at Kanokupolu was widened and heightened, non-return valves were replaced, and a boat ramp was rebuilt. This was a remedial measure following the January 2022 tsunami.
- A mangrove nursery was established at Nukunuku with arrangements in place for the Nukunuku youth group to continually restock and maintain the nursery. More than 8,000 mangrove/coastal vegetation seedlings were planted along 30 hectares of coastal land in northwestern Tongatapu contributing to the Government’s commitment of 1 million trees to be planted by 2030 as part of Tonga’s commitment to United Nations Framework Convention on Climate Change – Conference of Parties 27.
- Skills in climate resilience were enhanced for community representatives, town officers and youths through the training in community leadership, proposal writing and mangrove planting as an ecosystem-based approach to coastal protection.
- A people centred approach was adopted in all the project’s activities, e.g. communities were consulted at several stages in the preparation of the coastal protection plan; youth and community groups were involved in the mangrove planting activities; communities were consulted regarding the selection of Kanokupolu as the site for post-tsunami remedial measures.
- Recognising the importance of climate change awareness, support was provided to Tonga’s climate change awareness week activities in 2020, 2021 and 2022. This included tree planting, coastal clean-ups and video competitions. A stand-alone server for the Tonga Climate Change Portal was provided to the Department of Climate Change.
- A video was prepared “Scaling up coastal protection in Tonga 2014 to 2023.”

Tonga details: output 3

The PDD was signed in May 2020, following a consultative phase.

Assessment, consultation and design of measures

- Two consultations were conducted, the first in June 2019 included government agencies and the NGO Forum; and the second in August 2019 included community leaders who had the opportunity to present their concerns and needs.
- The design of the hard and soft coastal protection measures is described below under KRA 1. This involved re-design following the January 2022 tsunami. This design also included several

consultations with MEIDECC, the Joint National Action Plan (JNAP) for climate change and disaster management, community leaders and community residents.

- The January 2022 tsunami resulted in a change of focus in that the planned scaled-up coastal protection measures were changed to post-tsunami remedial measures. This change in focus was agreed with the EU.

Further details on the KRAs are presented below.

KRA 1: Conduct a coastal assessment, feasibility, and conceptual design study for coastal protection along the entire north coast of Tongatapu (Niutoua to Ha’atafu)

The documents prepared and revised in the assessment, feasibility and design process are summarised below:

Date	Document
December 2020	Desktop assessment for coastal protection along the north coast of Tongatapu, Tonga (Niutoua to Ha’atafu and including the Fanga’uta Lagoon).
March 2021	Conceptual design and preliminary costing, including community consultations, for coastal protection along the north coast of Tongatapu (version 1)
June 2023	Conceptual design and preliminary costing, for coastal protection along the north coast of Tongatapu following the 2022 tsunami revised (version 2)
August 2021	Detailed design of selected small-scale coastal protection measures completed (version 1)
May 2022	Revised design of selected small-scale coastal protection measures since the January tsunami, completed (version 2)

- These documents all included input from MEIDECC, the Joint National Action Plan (JNAP) for climate change and disaster management, community leaders and community residents.
- The revised design of selected small-scale coastal protection measures since the January tsunami, (version 2) represents a comprehensive planning approach for the north coast of Tongatapu for the 2030 and 2050 planning horizons and replaces previous piecemeal approaches.

KRA 2: Implement small-scale coastal protection and ecosystem-based measures in northwest Tongatapu (Sopu to Ha’atafu)

- A combination of hard and soft engineering measures was implemented in northwest Tongatapu.
- As a remedial measure, the 1.35 km long coastal rock revetment in front of Kanokupolu, one of the coastal areas most seriously impacted by the tsunami, was heightened and widened; two non-return valves were replaced and a boat ramp was reconstructed. (The project timeframe and budget did not allow for a full reconstruction of the revetment).
- The soft measures consisted of the planting of 8,000 mangroves/coastal vegetation seedlings, establishment of a nursery and plans in place to continue replenishing the nursery; and the construction of six public warning signs relating to coastal flooding.
- Youth were a major target for capacity building. A preliminary training workshop in mangrove planting was held in 2021. A nursery was established in Nukunuku in 2022. The Nukunuku Town Officer has signed an agreement with the Climate Change Department to maintain this nursery and the youth group will be responsible for restocking and plant care.
- The Climate Change Department and other government agencies will purchase seedlings from the Nukunuku nursery and other nurseries in Tonga to reach their target of 1 million trees planted by 2030.

- Other complementary training was provided in proposal preparation, community leadership (for Town officers), and climate resilience and traditional knowledge (youth and elders).

KRA 3: Enhance awareness about the impact of climate change and natural disasters in Tonga

- ❖ The project supported various awareness activities as part of climate change week in 2020, 2021 and 2022. These included a video competition with the theme of “Building a resilient Tonga”; the winners were youth groups and women’s groups. Other activities included coastal clean-ups and tree planting.
- ❖ A server-based network system was installed to strengthen the Tonga Climate Change Portal. This provided a safe and secure platform for awareness, knowledge management and information sharing.
- ❖ A video on “Scaling up coastal protection in Tonga 2014 – 2023” has been produced. This presents the holistic approach to coastal protection that has been developed over the ten-year period with the support of the GCCA: PSIS project, GCCA+ SUPA project and other development partners.

Challenges

- Due to travel restrictions brought about by COVID-19, the consultations between the project team at SPC Fiji and government partners in Tonga during the project implementation period were convened entirely through virtual meetings. This arrangement was hampered by poor internet connections.
- The January 2022 tsunami had a major physical impact on Tongatapu, especially the north coast, and a psychological impact on Tongan residents. In addition, the underwater fibre optic cable was severed, and there was no communication with Tongan partners for at least a 2-month period. This resulted in having to refocus and redesign the project activities especially those relating to the design and implementation of the engineering and ecosystem-based measures.

Lesson learnt

- Applying a people centred approach in the design, planning and implementation of the project is critical to achieve acceptable and culturally appropriate measures.
- An inclusive community consultation approach that considers all members of the communities including women, youth, elders and persons with disabilities is important for informed planning and implementation.
- A flexible approach is encouraged as decisions and needs are likely to change between design and implementation phases. Careful attention to planning for natural disasters in risk matrices and scheduling is necessary in the design phase.
- Focusing capacity-building training on climate resilience for youth and children provides a good foundation for future leaders.