



**THE COASTAL
COMMUNITY
ADAPTATION PROJECT**

*Helping Pacific Island
Communities Adapt to
a Changing Climate*

C-CAP NEWSLETTER

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SMALL ISLANDS, BIG PERSONALITIES

C-CAP NAVIGATES CHALLENGING LANDSCAPES IN NAURU AND TUVALU, TWO OF THE FIVE SMALLEST COUNTRIES IN THE WORLD.

Pinpoints on the map, Tuvalu and Nauru are two of the five smallest countries in the world both in terms of size and population. Yet, for different reasons, over the years both have earned global recognition for their outsized personalities.

With a population just over 11,000 and a total physical land area of 10 square miles (26 sq kms), Tuvalu is an island nation comprised of a group of six coral atolls and three reef islands that lie approximately 700 miles north of Fiji. While small in size, Tuvalu is large in stature, with an outspoken voice that has echoed loudly throughout the climate change community. In recent years, Tuvalu, a member nation of the Alliance of Small Island States (AOSIS), has emerged as one of the most widely recognized advocates for climate change adaptation in the world.

Through C-CAP, USAID is helping to answer Tuvalu's calls for support, while addressing some additional logistical challenges along the way. Reflective of the country's size and limited resources, the C-CAP team has found a dearth of transportation options in Tuvalu with no domestic airline, and only two government-run inter-island ferries—the Manufolau and Nivaga II—that traverse the islands every three to four weeks. Due to its small outer island population, and because its limited tourism market is focused on Funafuti, Tuvalu does not have any private vessels for hire.



LEFT: The location of Nauru and Tuvalu—pinpoints on the map.

BELOW: Inter-island travellers in Tuvalu must go by sea, either by public ferries or private vessels like the one pictured. *Photo by C-CAP*



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SMALL ISLANDS, BIG PERSONALITIES *continued...*

A round trip to one island in Tuvalu can take more than one month to complete—which can be challenging for a project like C-CAP that must adhere to a tight timeline to carry out work in dozens of communities across the region. Disembarking on an island, following a one-day journey from Funafuti, the ferry continues on its round-trip around the country followed by a maintenance visit back to capital. To return to Funafuti, one must wait for the ferry's next journey, which typically only occurs once every three to four weeks, but sometimes longer if one boat is on a quarterly trip to Fiji, or if there are rough seas. Depending on whether the island is an early or late stop in the journey, the return trip around the islands can take more than a week.

In collaboration with eager partners in the Tuvalu Ministry of Foreign Affairs & Environment, the C-CAP team has launched adaptation work, with Climate Change Risk and Asset Mapping, in Funafuti Atoll's Kavatoetoe community. C-CAP is determining the most appropriate way to support adaptation in the country's other eight islands and

atolls while navigating the challenging logistical landscape. In the coming months, C-CAP will return to Tuvalu to finalize plans for providing adaptation support to the outer islands.

Domestic transportation is not nearly as challenging in Tuvalu's neighbor to the northwest, Nauru. Nauru—a single island—is located half way between Hawaii and Australia. Slightly smaller than Tuvalu—and about 1/10 the size of Washington, D.C.—Nauru is eight square miles (21 sq kms) in size, with a population of approximately 9,300. Nauru's fame is derivative of its once booming phosphate mining industry which made it one of the richest countries in the world in the 1970s.

Mining continues on a smaller scale in Nauru, but the island nation may now be better known as one of the low-lying Pacific Islands struggling to adapt to the impacts of climate change. While it takes a mere 20 minutes to circumnavigate the country in a vehicle, the pathways to achieving water security are rife with obstacles. During February meetings with Nauru government officials,

and during Climate Change Risk and Asset Mapping activities with our six communities, the C-CAP team found that our partners are concerned that climate variability and projected impacts of climate change could significantly affect rainfall levels and threaten the country's water security.

Nauruans primarily rely on a dated desalination plant and surplus from the Nauru Regional Processing Centre's desalination plant for their drinking water. In other Pacific Island states, communities rely on rainwater catchment systems that divert runoff from rooftops via a gutter system into large catchment cisterns. Rainfall that is not captured finds its way to the thin freshwater lens below Nauru's surface; however, due to pollution from phosphate mining, this limited groundwater resource is viable only for non-potable uses.

C-CAP is working in partnership with the Nauru government to develop creative solutions to the country's water security challenges that are growing in complexity due to climate variability and change. The C-CAP team is currently exploring a range of options, including miniature desalination units and coupling rainwater catchment systems with roofing replacements. In the coming months, the C-CAP team will return to Nauru to explore these and other adaptation solutions.



LEFT: Infrastructure for loading phosphate, the mining of which has resulted in the pollution of groundwater in Nauru. *Photo by C-CAP.*

GLOBAL WARMING & HUMAN ACTIVITY COMBINED: LIVELIHOODS AFFECTED *in* **TUVALU**

Over the coming decades, as sea surface temperatures continue to rise and ocean acidity levels increase due to global warming, Tuvalu's native marine resources are likely to experience increasing pressure, and minimizing their decline will require strategic interventions.

Coral bleaching and invasive seaweed affecting Te Namu Lagoon and threatening Tuvalu's most important source of livelihoods—coastal fisheries.

C-CAP team members Nick Hobgood and Joey Manfredo directly observed that an invasive brown seaweed—*Sargassum polycystum*—has taken firm root in Tuvalu. The algae tolerates polluted conditions, and is thriving in areas adjacent to densely populated areas and public buildings such as schools and the hospitals. Spreading 100 meters into Funafuti's Te Namu Lagoon, and rising up to two meters from the sea floor, the algae is significantly impacting the subsistence economy, marine ecosystem, and human health.

Unfortunately, the environment is growing less hospitable to marine life even on the Lagoon's periphery. The C-CAP team noted significant coral bleaching off Fualifeke Island while on an expedition with Anosa, a member of a C-CAP partner community. Anosa reports to have noticed a significant decline in fisheries even here, an hour-long outboard motor boat ride from Funafuti.

The people of Kavatoetoe village in Tuvalu have worked with the C-CAP team to identify the worsening effects of climate change in their community, and its connection with issues affecting livelihoods and wellbeing, including brown seaweed infestation and freshwater scarcity. Equipped with this knowledge, the community is now better positioned to mitigate behaviors that are exacerbating their challenges, and to anticipate and adapt to future environmental change. C-CAP will deliver adaptation assistance to up to nine other vulnerable communities in Tuvalu.

LEFT: Bleached coral off the coast of Fualifeke Island., Tuvalu. *Photo by C-CAP.*

C-CAP FEATURED ON FILM - COMING TO A SCREEN NEAR YOU!

The work of USAID/C-CAP will be highlighted in a TV series to be aired on MAI TV—a local Fijian television station—in iTaukei (Indigenous Fijian) language. Likely starting in May, each episode of the climate change adaptation series will profile the efforts of a Fijian community to overcome issues being caused or exacerbated by climate change.

In February C-CAP's Semi Masilomani traveled to Nakasaleka in Kadavu Province with MAI TV to record footage of C-CAP's work with the village to map climate change risks and prioritize potential resilience-building infrastructure activities.

The TV series is being orchestrated by C-CAP's implementing partner, the University of the South Pacific's 'Pacific Centre for Environment and Sustainable Development' (PaCE-SD).



ABOVE: MAI TV's Mesake Dakua prepares a video shoot. *Photo by C-CAP.*

Follow C-CAP's [Facebook](#) page to be notified of the Mai TV series airing schedule.

ADAPTATION IN MOTION CHECKING IN WITH C-CAP COMMUNITIES: NAURU, SOLOMON ISLANDS, TONGA, AND TUVALU.

In this periodic series, the C-CAP team checks in on partner communities that are navigating the long term process of climate change adaptation.

In Nauru...

The team's late-February visit to Nauru was a busy time, packed with meetings,¹ community workshops, and even a television interview.

Jeremy Cole and Teddy Fong ran workshops with the first six Nauruan communities to work with C-CAP: Baiti, Yaren, Boe, Aiwo, Denigomodu, and Location (a large community settlement). Having identified and mapped their climate change risks, the communities are now prepared to undertake climate change adaptation planning and decision-making. Further workshop activities will be conducted in the communities in April, when C-CAP's Fiji-based technical team will revisit Nauru.

¹ C-CAP met with the Minister for Commerce, Industry and Environment (CIE), representatives of the CIE Ministry, and Nauru Utilities Corporation.

In Solomon Islands...

In early February, Community Liaison Officer Isoa Korovulavula and Project Manager Joey Manfredo boated across the calm waters off of Honiara to Solomon Islands' most populous province, Malaita, where they (and their fellow passengers) received a raucous greeting from a group of local children, pictured bottom right, who rushed from the shore towards the incoming vessel.

While in Malaita, the team completed Climate Change Risk and Asset Mapping activities in Lilisiana, New Kaloka and South Dala communities. Three out of four households in the Province depend on subsistence activities—including agriculture, fishing and handicraft sales—or remittances as their main source of income. Among the subsistence activities practiced, 95-percent of all families are involved in farming; 68-percent of households raise livestock; and 49-percent of households practice fishing.

Given the Province's dependence on the natural resources base for their subsistence livelihoods, our C-CAP

team was not surprised to find that changing precipitation patterns, sea level rise and extreme sea level events were among our partner communities' greatest concerns related to climate change.

Lilisiana resident, 45 year old William Toli, told the team the changes he has observed in his village over the last few decades. Higher monthly king tides are now "the new normal," Toli said. "But, I don't like that normal."

As monthly high tides encroach further inland—elevated by sea level rise—they leave behind more saline soil and recede to the ocean with precious topsoil, causing sedimentation of coral reefs and impacts on coastal fisheries and agriculture.

In April, C-CAP will return to Malaita to complete Climate Change Risk and Asset Mapping exercises in two additional communities, while revisiting Lilisiana, New Kaloka and South Dala to begin identifying potential adaptation projects to mitigate their climate change risks.



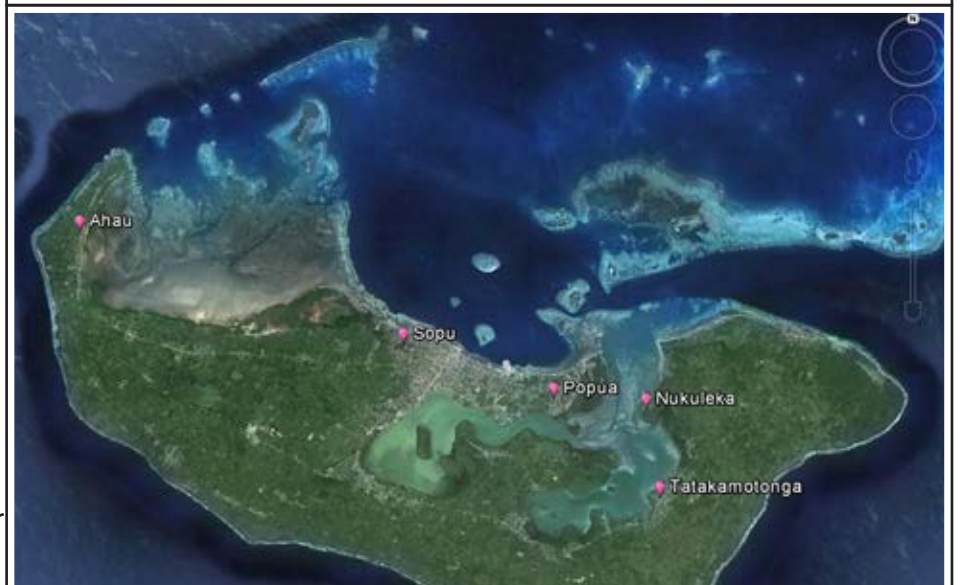
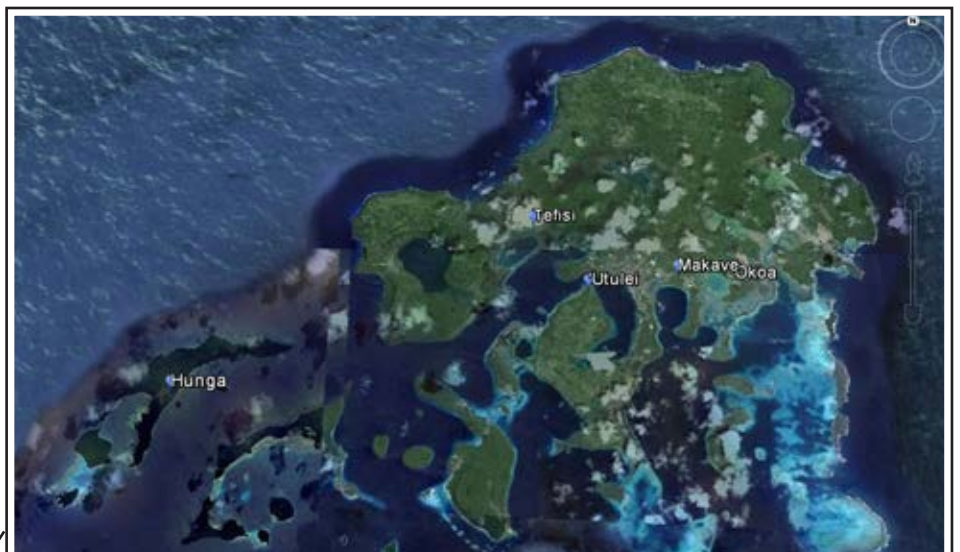
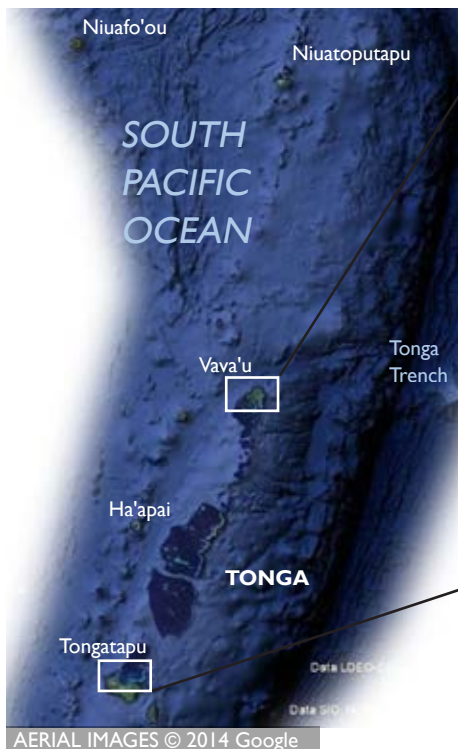
ABOVE: Scenes from two participating communities: (left) foreshore at Boe in Nauru; (right) Malaita, in Solomon Islands. Photos by C-CAP.

ADAPTATION IN MOTION *continued...***In Tonga...**

In 2014, we began our work in the land of the warm-hearted people (*fatafata mafana*), Vava'u – with five new communities – Hunga, Makave, Okoa, Tefisi and 'Utulei, but we did not forget our community partners in Tongatapu! In Tongatapu's Ahau, Nukuleka, Popua, Sopus and Tatakamotonga communities, NRW MacAllan Engineer Alena Mucunabitu, a C-CAP partner, completed an engineering scoping exercise for each community's prioritized infrastructure adaptation project. Alena was hard at work in February, conducting measurements and analysis on:

- community hall renovation projects in Nukuleka and Tatakamotonga to bring each to cyclone code and transition them into disaster evacuation centers;
- construction of a disaster evacuation center—which can also be used for general community events—in Popua; and
- increasing rainwater catchment capacity, while also improving existing infrastructure—with installation of first-flush systems and other modifications—in Ahau and Sopus.

Engineering designs produced through the visit will be completed in early April (except for Sopus, which is still being scoped), after which C-CAP will package and post for bidding by Tonga-based construction firms. The design and construction/retrofit of the evacuation structures is being coordinated with the National Emergency Management Office, ensuring they will meet and exceed Tongan standards, and will be recognized in national disaster planning.



PICTURED: A map set of the Kingdom of Tonga, with detailed profiles for Tongatapu and Vava'u, which pinpoint our partner communities.

ADAPTATION IN MOTION *continued...***In Tuvalu...**

In Tuvalu, C-CAP works to complement and build on the collective efforts of government partners and various other donors and initiatives working to promote climate change adaptation there, as with the other 11 Pacific Island countries where it operates. With this objective in mind, the C-CAP team met in mid-February with a wide range of partners across Tuvalu's public sector, as well as other donor program initiatives to discuss matters of interest and coordination.¹

During the scheduled meetings, the C-CAP team met with Taiane Amasone, Acting Project Manager to the South Pacific Regional Environment Program's (SPREP) Pacific Adaptation to Climate Change

(PACC) Project, to discuss the potential to coordinate our support. PACC and C-CAP are both working with Funafuti Atoll's Kavatoetoe to enhance the community's climate change resilience, including through the provision of infrastructure.

PACC has funded the construction of a concrete foundation for a church building in Kavatoetoe, which—owing to a clever design—doubles as a rainwater reservoir (measuring 18 x 8 x 2 meters). Completed by the Tuvalu Public Works Department, the dimensions of the reservoir—and the roof that will accompany it—are based on the goal of accommodating the domestic water usage needs (i.e. 100 liters/day/person) for the estimated number of water consumers, based

on precipitation data and projections.

In coming months, Kavatoetoe will work with C-CAP to identify climate change adaptation solutions to drought and other identified climate change risks most-needed by the community. Support for the completion and/or ongoing maintenance of the rainwater catchment church structure is one of the priority solutions that Kavatoetoe is likely to consider. As a community that, due to an unreliable potable water supply, relies on rainwater catchment systems to meet everyday water needs, Kavatoetoe is actively seeking opportunities to expand their water catchment capacity.

BELOW: (front) Freshwater scarcity concerns were a recurrent theme during C-CAP's one-day workshop with Kavatoetoe's C-CAP Community Committee—pictured above with C-CAP team members and partners from the Tuvalu Ministry of Foreign Affairs and Environment—in February to map the community's assets and climate change risks. (rear) The PACC-funded rainwater tank / building foundation. *Photos by C-CAP.*

¹ C-CAP met with representatives from: Prime Minister's Office; Ministry of Environment; Ministry of Lands and Survey; Ministry of Public Utilities and Infrastructure; Ministry of Home Affairs, Department of Rural Development; NAPA (National Adaptation Programme of Action) Tuvalu; Funafuti Kaupule; New Zealand High Commission; South Pacific Regional Environment Program (SPREP) Pacific Adaptation to Climate Change (PACC) Project; University of the South Pacific's Pacific Center for Environment.



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