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FROM THE AMERICAN PEOPLE

PACIFIC ISLANDS

TRANSFORMING LIVES

USAID Maps Climate Future for Islanders

USAID project provides access to climate services and tools for adaptation in 12 Pacific Island countries



Photo by USAID/C-CAP

Pio Waqairatavo explains to C-CAP Country Mobilizer Semi Masilomani the negative impact of rising sea levels on the near shore area in Vunisavisavi village. Vegetation in the area is dying due to the saltwater intrusion, making it harder to cultivate staple crops of cassava and taro.

“Ten to 15 years ago, seasonal king tides only reached the sandy beach front,” says Pio Waqairatavo, the Turaga Ni Koro (chief) of Vunisavisavi on the Fijian island of Vanua Levu. “But today,” he points deep into the small coastal community, “daily high tides go right into the village.”

The USAID Coastal Community Adaptation Project (C-CAP) team has met with dozens of citizens like Pio from coastal communities across the project's 12 partner countries. Within the Pacific Islands region, some countries are experiencing sea level rise (SLR) rates up to four times the global average¹. It's no surprise that many people say climate change is a death knell for these low-lying nations. But C-CAP has found the contrary; this great challenge has inspired a resolve for islanders to do what they've done for millennia—adapt.

The Pacific's idyllic scenery masks a challenging environment. Pacific Island countries experience semi-annual cyclones and seasonal tropical storms, active volcanoes and barriers to communication and economic development due to their remote location and dispersed geographies. Despite these complex challenges, Pacific Islanders thrived for hundreds of years prior to Western contact.

TODAY'S CHANGING CLIMATE

Global climate change presents a range of effects that defy Pacific Islanders' traditional knowledge of the climate. Today's high tides eclipse last century's; heavy rains, historically seasonal, are projected to become erratic and interspersed between longer periods of drought; and projections for more intense precipitation and cyclones² will have a multiplier effect on SLR, sending waves crashing deeper inland.

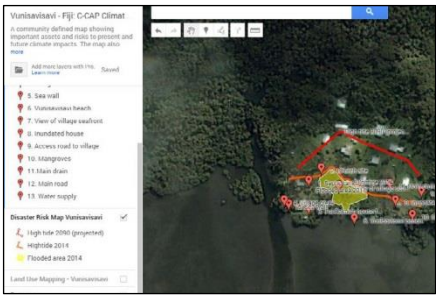
In Vunisavisavi, Pio explains that prior to working with C-CAP's mapping products, “[the community's] initial plan was to conserve the foreshore with a seawall to protect the village.” Storm surge and king tides extend further inland each year, cresting and then stagnating in the less-elevated rear of the village.

Telling Our Story

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¹IPCC, 2014: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

²Australian Bureau of Meteorology and CSIRO, 2011. Climate Change in the Pacific: Scientific Assessment and New Research. Volume 2: Country Reports.



Screenshot by USAID/C-CAP

Climate Change Asset & Risk Maps depict the spatial layout of economic, social, and water infrastructure in C-CAP partner communities. Clicking on the “Disaster Risk Map” tab adds the “Climate Futures” layer depicting estimated high-tide points in 2090 and flooding inundation zones.

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Photo by USAID/C-CAP

C-CAP Country Mobilizer Unaloto Puloka, pictured at left, and Sopo Community Social Mobilizer and Town Officer Sio Tu'iano use a simple clear tube with water as a level to measure the impact of sea level rise projected for Tonga by 2090.

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C-CAP then introduced Vunisavisavi to Climate Change Risk and Asset Mapping to plan climate change adaptation activities and create land use plans. Using geo-referencing on GoogleMaps, this innovative tool pinpoints village infrastructure and climate risk areas, like the inundation zone in the ‘bowl’ of the village. GoogleMaps is a free, accessible tool that C-CAP has utilized to support climate change planning.

C-CAP used simplified survey tools—a two-meter ruler, string and a small bubble level—to estimate how the high-tide point may change if climate change projections for a 20 to 59 centimeter increase in sea level by 2090 become reality in their communities.²

Estimated high-tide points, and other vulnerable areas, are transposed onto GoogleMaps’ “Climate Futures” Layer.” By adding the layers, communities visualize infrastructure—such as homes, schools, health clinics, and plantations—most at risk to SLR now and in the future.

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The Vunisavisavi community is now working with C-CAP on a more sustainable, forward-thinking strategy: restricting construction of homes to areas outside the high tide and inundation zone projected for 2090. The community is clearing an area further inland within the village that mapping has shown to be beyond the impact area of future SLR and not subject to other identified risks such as flooding from upstream drainage issues. Based on this information, the community has resolved to build future housing and infrastructure such as schools and clinics in the designated “clear zone” and to assist people in moving from houses currently located in at-risk areas. C-CAP will assist Vunisavisavi partners’ efforts by building new houses in the designated clear zone.

Not all innovations must be complex. With C-CAP’s support, island partners are discovering that a bird’s-eye view, access to climate change information and simple tools is what they need to reclaim and strengthen their culture of resilience.

This simple risk mapping tool, supported by knowledge of climate trends and training, is transforming how villagers look to the future: with more knowledge about what is likely to happen next, an increased understanding of what options are available to mitigate impacts, and confidence in making decisions to do things differently.

“We have always built our houses very close to the water,” Pio says. “Now we understand that building on higher ground will protect us now and in the future.”