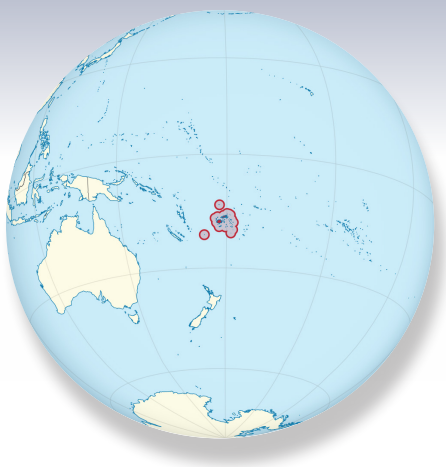
United Nations Educational, Scientific and Cultural Organization

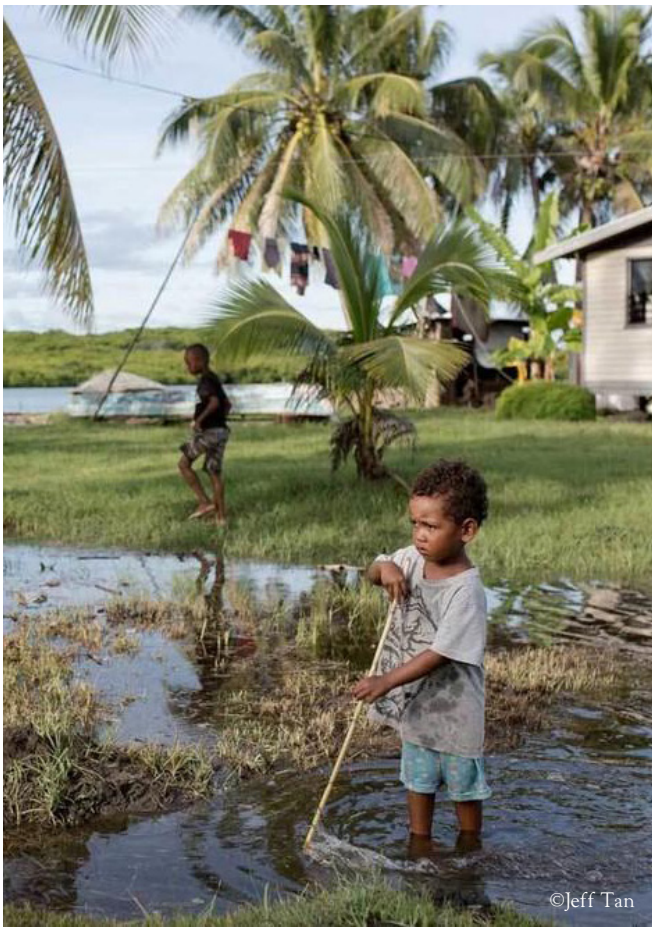
Sustainable Development Goals

Towards climate change resilience: minimizing loss and damage in Pacific SIDS communities



FIJI

The UNESCO and USP PACE-SD project "Towards climate change resilience: minimizing loss and damage in Pacific SIDS communities" was funded by the Government of Malaysia. The overall goal of the pilot project was to generate and share new knowledge and raise awareness on loss and damage caused by the adverse impacts of climate change in five Pacific Small Island Developing States (SIDS): Cook Islands, Fiji, Samoa, Solomon Islands and Timor-Leste. The pilot project developed and tested tools and approaches to better understand loss and damage at the community level; identified challenges in coping and adaptation; and made recommendations for follow-on interventions in both research and implementation.



PILOT RESEARCH IN FIJI

The research was carried out in four communities in Fiji (the 3 coastal communities of Nacekoro, Silana and Nataleira and the inland community of Nabukelevu). All the communities reported significant loss and damage due to on-going impacts of rapid onset events including cyclones, floods and storm surges. Slow onset stressors included sea level rise—leading to floods, saltwater inundation and beach erosion—and shifting precipitation patterns—leading to floods, droughts, and landslides and can impact the circadian rhythms of some crops.

Saltwater inundation, floods and beach erosion strongly affected agriculture and tourism in coastal communities. Saltwater inundation reduced the yield of crops and the availability of arable lands leading to severe social and economic impacts.

Tropical cyclones, beach erosion, floods and storm surges all damaged infrastructure, affecting tourism, which also had knock-on effects for suppliers, such as farmers, guides and manufacturers of arts and crafts.

Households and villages tried an array of coping and adaptation strategies with variable success, including building a sea wall that quickly failed, shifting plantations inland or compensating for temporary income loss by selling livestock or cutting back on food.

MAIN STRESSORS

Sea level rise

Flooding and shifting precipitation

Saltwater inundation

Storm surges

Community experiences

Farmers and tourism operators, staff and suppliers spoke of the challenges they face due to a complex interplay of climate change, natural hazards and development. This is one of their stories.

Sea level has risen by about 6 mm per year since 1993,[1] leading to saltwater inundation of coastal plantations.

There is more rain and cloud cover than sunshine when compared to the sixties and seventies. We have lost one important income generating product, mango dina. This area is well known for mango dina, but now it does not fruit anymore... This is also a well-known rice growing area, and the rice fields are now idle. Rice is not producing as well as before and we are still not sure as to what is the real cause. Some have said that it is **the increase of salinity** in the soil but we are not really sure.

The data do not show a clear trend of shifting precipitation,[2] but shifting patterns were reported by all the communities.

Peanut is also affected by the **shrinking of the (beach) areas** where they are usually grown. The harvest every year is falling more and more. Ginger is being introduced (but) it is being planted some distance away from the village. ...Peanut is better, the labour is less, income is more and it only takes three months to mature.

Beach erosion was reported as a primary cause of loss and damage in all three coastal communities.

Beach erosion is quite visible and sections of the beach are eroding. Coconut trees along the beaches are being washed away by the sea. My family still stays in the exposed section of the village. The likelihood of being flooded from **storm surges and floods** or both at the same time is very high. **The threat from sea level rise is very high** as the area is about half a meter to one meter above sea-level.

Storm surges and coastal flooding are expected to worsen because of sea level rise.[1]

Senior Man
Nataleira Village

[1] Fiji Meteorological Service, Australian Bureau of Meteorology and Commonwealth Scientific and Industrial Research Organisation (CSIRO) (2015), "Current and Future Climate of Fiji".

[2] Republic of Fiji. (2014). Second National Communication to the United Nations Framework Convention on Climate Change. Suva, Fiji: Ministry of Foreign Affairs.

Case study: Impacts of shifting weather patterns

Community members reported increased droughts, floods and that they were less accurately able to predict the weather. They spoke about how this impacted them and how they responded.

Shifting precipitation patterns have wide-spread consequences in both sectors.	Agriculture	Tourism
Specific impact	Some high value crops are failing: • The unopened inflorescences of Duruka (*Saccharum edule*), are gathered (sometimes wild), roasted and eaten, but they are no longer setting flower. • Mango is used for food, sold for cash in the market and to resorts and hotels. Mango is an important part of traditional cultural exchange. It is no longer fruiting. • Some participants reported that their mandarin trees are not fruiting any more	Heavy rains, drought and less accurate weather prediction lead to: • Cancellation of bookings and tourist activities; • Decreasing the incomes of guides, producers of handicrafts, cosmetics and oils, clothing, specialty foods and other suppliers; • Cultural ceremonies held for tourists suffer from lack of mango.
Coping and adaptation interventions by communities	• Weather bulletins are used to better time planting, pruning, harvesting, etc. • Traditional crops, such as sweet potato, cassava. • Wild harvested crops are cultivated or harvested instead.	• Weather bulletins are used to plan activities for tourists and to predict level of business. • Mango has been replaced by other fruits, such as pawpaw and mandarin oranges when in season for cultural ceremony. • Community members have coped with loss of income by relying more heavily on subsistence activities, other sources of income.
Impacts after coping and adaptation	• Although traditional and wild harvested crops provide some income and mitigate some of the lost income, there is a crucial period (March-May) when the more valuable mango, mandarin and duruka would be sold that the families have no income. • Wild harvesting makes up some loss, but is much more labour intensive, especially for coastal communities who have less access to forest and must travel further. • Some replacement crops, such as yams are also declining due to the conditions. They become more labour intensive.	• Weather bulletins help some, but loss of income, especially for tourism service providers, continues.

RECOMMENDATIONS

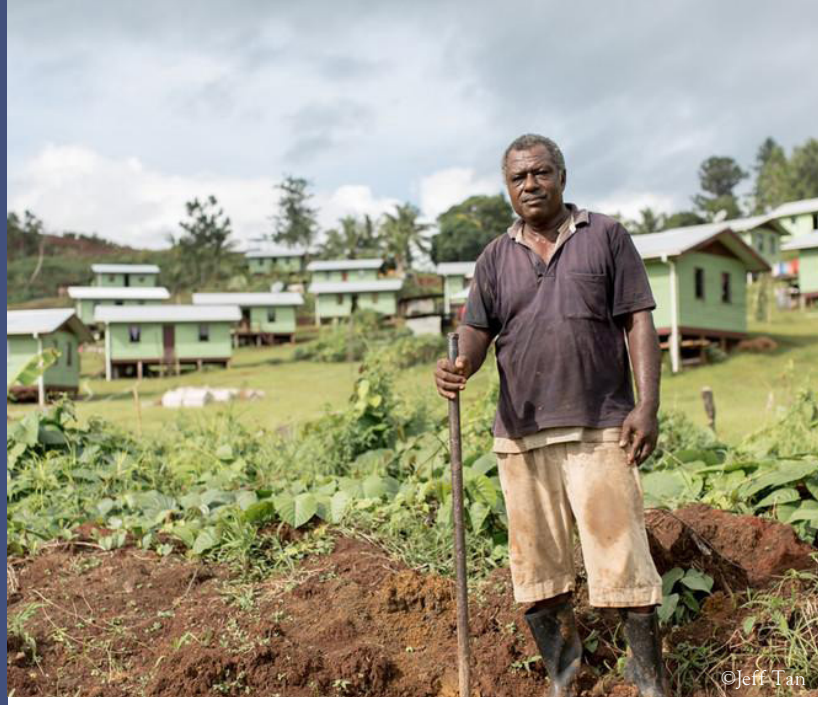
This pilot research has highlighted several areas of priority for future action by researchers, governments and development partners. It is recommended that stakeholders work in partnership to:

1. Further research the complex causes and knock-on effects of loss and damage at the community level.

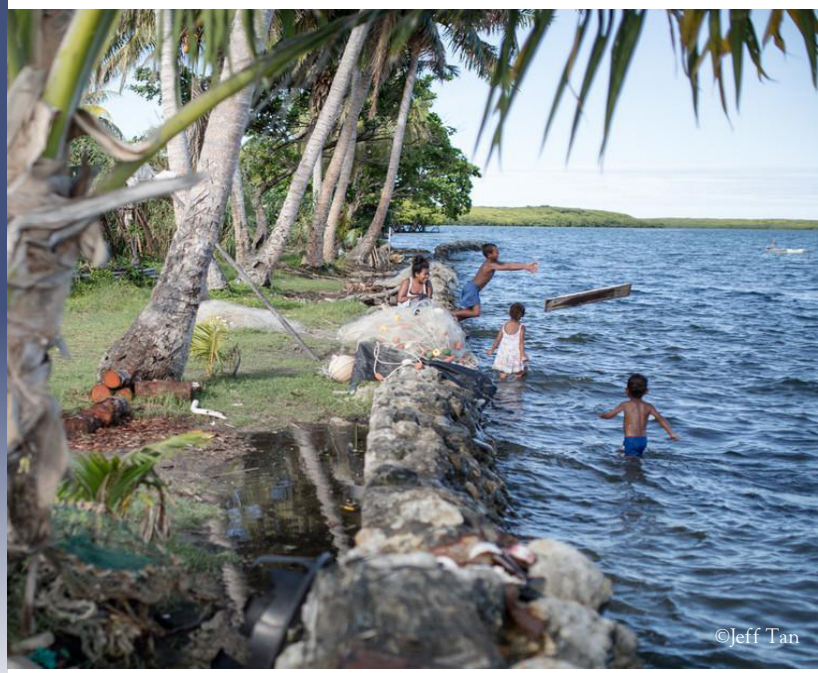
2. Further research the impacts of adaptation initiatives to better understand when they are successful at reducing loss and damage and when they have little impact or increase loss and damage.

3. Provide support to communities to move from coping strategies to implement longer term adaptation responses for the specific and complex issues that they face.

4. Support communities to articulate their problems in all their complexity and propose solutions in decision-making and planning contexts.



Simione Botu, the village chief, takes a break from attending to crops in Vunidogoloa, which was relocated more than a mile away and up a hill from the old village site. January 2015.



Children play on the sea wall which holds the tide at bay for the moment. It is prone to leaks and when combined with high tide and a storm, is overcome by the sea water, flooding sections of the village. February 2015.

For more information, see the brochure *Towards climate change resilience – Minimising loss and damage in Pacific SIDS communities.* UNESCO : Apia. 32p.
And http://www.unesco.org/new/index.php?id=132944

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