

Pacific Insight Brief 10 | Traditional and Local Knowledge

Traditional and local knowledge (TLK) in the Pacific is defined as *the accumulated place-based understandings of local residents, commonly communicated orally intergenerationally, about the causes and manifestations of natural phenomena, framed within non-western worldviews, and the optimal ways of responding to their impacts*¹. When it comes to climate change and disaster risks, TLK, aside from its intrinsic value, offers insights and potential opportunities for adaptation and mitigation.

A range of international and regional frameworks and conventions such as the Sendai Framework for Disaster Risk Reduction and the 2050 Strategy for the Blue Pacific Continent promote the role of TLK in people-centred development. Likewise, under its International Development Policy, Australia is committed to leveraging the valuable connections, knowledge and expertise that reside in local communities to support development outcomes including building resilience to climate impacts.

This brief is based on the Australia Pacific Climate Partnership's (Climate Partnership) experience, including working with researchers and local organisations in supporting efforts to better understand TLK, and how it can be used to help address climate resilient development challenges.

Insights and lessons

TLK in the Pacific has supported resilience for generations, however unprecedented rates of climate change complicate how it might support resilience in the future.

Rapid shifts in climate have already been observed and are predicted into the future. TLK (which has evolved over timescales with natural climate variability) might not be sufficient to meet the rate of transformation required to adapt to a changing climate. This presents opportunities and challenges for the integration of TLK and Western scientific knowledge to support holistic and long-term resilient development. Further, while there are strong examples demonstrating the potential efficacy of TLK in supporting resilience to disaster, there is a need for further research to better understand and document how people traditionally interpret predictors of severe weather, climate, and disasters.

The high degree to which TLK remains embedded in Pacific communities including through governance, culture, and customs highlight its value to climate and disaster resilient development.

Many Pacific islanders live in a context of continuing traditions across social, economic, and familial spheres which intrinsically include and are informed by TLK. Efforts to support climate and disaster resilient development must engage with these traditional forms of decision making and dynamism that draw on TLK.

Maintenance and propagation of TLK are at risk due to a range of factors.

Across the Pacific, TLK is not consistently and effectively communicated across generations due to factors including loss of traditional lifestyles and trends such as urbanisation and labour mobility. Aid modalities and approaches that do not embrace and support TLK are equally at risk of accelerating the erosion of TLK in the region. Climate change is increasing the incidence of forced relocation, which may become inevitable for even more Pacific coastal and atoll communities. Relocation of such communities poses further threats to, and loss of, place-based TLK.

TLK documentation and dissemination for food and water security is a high priority for supporting climate and disaster resilience.

There is a pressing need for TLK to be documented from local contexts by diverse groups of people and evaluated in terms of its suitability to resilient development more widely. Documentation and dissemination of TLK to support food and water security is considered a priority. Traditional ecological knowledge is comparatively well-known and often not readily transferable owing to its context specific (and often time-dependent) nature. There are good and increasing number of examples of the use of TLK for settlement and house construction.

¹ APCP (2022). *Traditional and Local Knowledge about Climate Change and Natural Disaster Management in the Pacific Islands*. Traditional Knowledge and Local Knowledge Scoping Study.

The relationship between TLK and Western science is dynamic, and each can strengthen the other.

TLK may benefit from Western scientific weather forecasts and climate projections, while Western scientific forecasts and climate projections can be contextualised, linked to local phenomena, and appropriately interpreted to suit community contexts using TLK. The Climate Partnership has supported an initiative that connects members of the Baru Conservation Alliance in Solomon Islands with scientists at the Australian Museum, Australian National University, and James Cook University, to share Kwaio traditional knowledge and experiences of climate change, providing context to Western climate science and aiding knowledge translation for remote subsistence communities in Solomon Islands.

In some cases, TLK may not be sufficient to take timely preparedness actions due to climate change impacts already being experienced by biological systems. For example, the movement of ants, often a TLK sign for local floods, may not indicate a warning since ants could be trapped underground due to an increased amount of rainfall in a short period, not providing enough time for them to move up to the ground surface. Western scientific weather forecasts can therefore provide early warning of floods, as TLK and corresponding natural systems and processes are increasingly affected by climate change.

Preservation of TLK through further research and documentation is critical, and its practical integration and application to development initiatives can support climate resilient development.

Concerted and focused effort is needed to support the preservation (and knowledge transfer) of TLK as well as its practical application. It includes identifying roles within the community (including youth), building trust, and increasing their capacity to continue on the preservation (including as some TLK is not to be shared with external groups). In some cases, this requires financial support and resourcing, but this alone is not the answer.

Aid modalities and approaches are equally, if not more, important in supporting TLK to be foregrounded in dialogue, engagement, and locally driven and owned solutions. Financial resources may be needed in some contexts, but preservation and dissemination of TLK should not be seen to be dependent on donor resourcing.

Valuing TLK is tied to the localisation agenda and is articulated through Australia's International Development Policy.

Aside from focused research efforts, the challenge for aid practitioners in the Pacific is to ensure time and space within aid programs to engage and learn from TLK in a context appropriate way. This takes effort and a deliberate strategy that facilitates Pacific stakeholders to recall and apply TLK in culturally sensitive ways. Additionally, Australia's

commitment to supporting First Australian perspectives across the aid program opens new opportunities for strengthened engagement in the Pacific on TLK.

TLK provides practical solutions for ecosystem-based adaptation and nature-based solutions.

Local communities are familiar with transitional practices for natural resource management, including the practice of natural reserves, and shoreline protection by planting mangroves and agroforestry, building resilience through community-based adaptation. TLK can also present environmentally and economically sustainable cropping practices, for instance, to stop soil erosion, enhance soil fertility and improve drainage, resulting in increased crop yield. These practices have the added benefit of contributing to both adaptation and mitigation efforts.

Currently, there are few TLK focused projects or initiatives, and where TLK is being engaged there is often low awareness and visibility.

While there has been an increase in discussions of TLK in the Pacific over the past 5-10 years, there have been limited dedicated projects or initiatives that focus on using TLK for climate change adaptation and mitigation and disaster risk reduction. The Climate and Oceans Support Program in the Pacific (COSPPac) is developing a traditional knowledge database that provides partner countries with a central register to manage and store their climate-related traditional knowledge.

Other known initiatives have supported collaborations with meteorological agencies and radio stations to develop and broadcast segments on traditional knowledge (in Vanuatu), and research and resources to support local conservation alliances document and apply TLK in their local setting (for example the Baru Conservation Alliance collaboration). In many cases however, locally-led TLK initiatives remain less visible to outsiders, and information on the success and outcomes of the projects is not published or publicised. For example, agricultural extension officers in Vanua Levu, Fiji, work closely with local farmers, integrating TLK with Western knowledge.

Women have played a key role as custodians of TLK.

Women in the Pacific region suffer disproportionately from climate impacts, but they also play an essential role in addressing climate change and disasters. TLK has a gendered aspect, as women often hold unique knowledge in certain areas. For example, in many rural Pacific communities, men may not know much about mangroves, while women have extensive knowledge about mangrove forests.

Strengthening women's leadership skills and education is important, given Pacific women have played a crucial role in the preservation and transmission of scientific ancestral

knowledge, which carries centuries-old practices to adapt to climate change and natural disasters. Knowledge is also passed down according to chiefly and other traditional titles, and there is typically a gender bias to this.

Working through local organisations is key to preserving and documenting TLK.

Collaboration with local organisations that have existing networks is critical for effective research on TLK. Pacific communities are more willing to share their TLK with researchers that they trust and who help them understand the value of the research. Pacific values including trust, respect and reciprocity are critical to building trusting relationships with Pacific research participants and collaborators.

Case example | Traditional and local knowledge research

Over the life of the program, the Climate Partnership has supported several research activities focussed on exploring the use of TLK in decisions about climate change adaptation and disaster risk reduction in the Pacific.

These activities include a scoping study from the University of Sunshine Coast which, in part, focused on how a significant amount of TLK exists in the Pacific related to the prediction of disaster events including tropical cyclones. The study found that this knowledge is often link to unusual plant or animal behaviour, as demonstrated in the example below.

“One of the most widespread types of tropical-cyclone prediction used in the Pacific Islands refers to excess fruiting or unusual shooting of particular plants. For example, with breadfruit and mangoes, when you find bunches of these fruits growing along a single branch – far more than usual – you know the upcoming wet season will be especially wet and windy. And the appearance of the leaves and shoots of particular plants is also used for this. In Fiji, for instance, when the central shoot of the vudi (plantain) grows straight, there is nothing to worry about ... but when it curls, that is a sure sign of very bad weather to come.”



Traditional Knowledge for Climate Resilience in the Pacific Islands – Patrick D. Nunn.

Opportunities

Sector specific investments can look to incorporate TLK in different ways by supporting and enhancing local practices, helping address local challenges, and supporting knowledge dissemination and documentation.

Opportunities to integrate TLK strategies into food and water security projects; DRR initiatives including early warning systems; improvements in traditional housing structures and natural resource management as well as education and curriculum should be prioritised. All such efforts need to be undertaken collaboratively with knowledge holders, in ways that are based on trust and ensure mutual benefit.

Engage with and support existing TLK initiatives and local partners.

Aid programs and investments can look to engage with and support initiatives and local partners that are already supporting the preservation and/or application of TLK. Data being collated through the COSPPac program, for example, could be accessed or supported. National museums and conservation societies have unique knowledge and capabilities but operate on thin budgets – support for research and engagement through these

organisations could be built into relevant programs to support and benefit from their work. Community-based projects can also receive support through research funding. For example, PhD students from the Australia or Pacific region can spend an extended time within the community, observing how TLK is used in daily life and document detailed information about TLK practices.

Actively build TLK into localisation, engagement, and aid investment strategies where relevant and support TLK to be foregrounded. There is potential to apply TLK to support climate resilient development, and practitioners can facilitate this in active and culturally sensitive ways through collaboration and partnership with local stakeholders. Drawing on strengths-based approaches and fostering autonomy over dependency, working with local partners to design and implement TLK strategies as part of aid programs, particularly those working at local community levels may be most effective.

This approach harnesses trusted relationships with local knowledge holders and decision makers. This also requires practitioners to reframe narratives away from 'vulnerability' and instead understand and acknowledge culturally grounded stakeholder resilience.

Australia's International Development Policy presents a renewed commitment to embed the perspectives of First Nations Australians in Pacific development initiatives. Despite differences in First Nations Australian knowledge and Pacific TLK, and the contexts in which they are grounded, there are shared interests in documenting TLK and integrating it into the development agenda.

Opportunities to facilitate engagement and sharing of practices, and investment models to promote the use of TLK can be explored. Initiatives such as the Indigenous Pathways that has supported tailoring of the Indigenous Rangers program demonstrate the opportunity. Other opportunities include exchanges and/or twinning arrangements between Australian and Pacific indigenous people and building dialogue to explore further opportunities.

Seek to complement and strengthen knowledge through consideration of both TLK and Western scientific knowledge. Forms, sources, and perspectives of knowledge are not mutually exclusive, but rather can be mutually reinforcing and complementary. By approaching knowledge challenges with respect for all forms of knowledge, dialogue on climate resilient development at community levels can be greatly enhanced. This requires an openness to being challenged and finding areas of complementarity, as well as respect for difference. Community members need to be oriented towards the value of TLK and encouraged to integrate it with new Western scientific knowledge.

Climate specific investments and activities can seek to combine both Western and TLK to establish shared understandings and solutions. Pilot projects should be enabled to combine site-specific TLK with science-based information to identify optimal pathways for future community adaptation.

Continue and/or increase funding support for the collection and analysis of Pacific TLK, largely by in-country stakeholders, for climate change and disaster risk management. While examples of TLK being used as predictors of weather and potential disaster events seem effective, more needs to be done to understand how information is used and interpreted. Integrating Pacific TLK into resilient development requires further research.

Collecting more information from traditional communities throughout the Pacific Islands and collaboration between Western scientists and traditional knowledge holders will enable analysis and mutual understanding of the science of TLK. Further, it is very likely that additional indicators, not yet identified do or have existed in the Pacific region but are not yet documented.

It should also be noted that TLK is inherently tied to specific locations and contexts, making documentation challenging for outside researchers. Adopting a citizen science approach, with individuals from rural communities capturing environmental could greatly enhance understanding and validation of TLK.

Support monitoring and inventorising of Pacific TLK. This could be done in a range of contexts and take on a range of approaches from incorporating into investment monitoring and learning frameworks to supporting structured collection and database documentation with local partners. Quality control of monitoring and learning process needs to be ensured through determining who collects interprets and owns the data. A focus on support to understanding local-scale climate change impacts, adaptation and mitigation strategies involving TLK holders is needed.

Over the long term, this can lead to the comprehensive inventorising of traditional knowledge systems for adapting to climate change, which will lead to international recognition through the mechanisms established by the Intangible Cultural Heritage (ICH) Convention. Research into the efficacy of key Pacific TLK for climate variability and disaster coping should be enabled, including academic training of Pacific Islander professionals. Support for documenting Pacific TLK in a digital database and its dissemination within the region should be enabled.

Disseminate TLK and revitalise it for future adaptation, with a focus on the *how* TLK contributes to climate change adaptation and DRR. An opportunity exists to integrate TLK into school curricula in Pacific Island Countries. In Micronesia, this initiative is already underway, particularly TLK related to use of vegetation. Integrating TLK into school curricula not only preserves cultural heritage but also educates young people, who often lack knowledge of TLK. However, this process is time-consuming and requires patience and groundwork.

Case example | Co-creating climate information resources

Baru Conservation Alliance (Solomon Islands) and James Cook University (Australia) are working with Kwaio communities in the remote mountains of Central Malaita to create climate information resources that incorporate traditional Kwaio knowledge and understandings of climate and weather patterns with western climate science.

Three community workshops have resulted in the drafting of localised climate resources including infographics, music, songs, and short videos in Kwaio language as a resource for other local communities. These resources will aid planning for climate-related events and strengthen climate and disaster resilience for Kwaio people.

Flour-making manuals have also been developed, and workshops have been conducted to review and demonstrate the Baru Conservation Alliance manual flour-making initiative.

Changing weather patterns threaten food security and nutrition for Kwaio tribal people living a subsistence lifestyle in the remote mountains. During the recent workshops with Kwaio communities, Baru Conservation Alliance demonstrated how to make flour from sun-dried, locally grown garden crops using manual grinders. Recipes were trialled using flours and forest foods to prepare nutritious meals in culturally and environmentally sustainable ways. Both women and men are engaging with the program and are trialling local foods for suitability for flour production, storage, meal preparation, and taste.



Further reading:

Please visit the resources section of [ClimateWise](#) to access a range of knowledge products including the Traditional Knowledge in Climate and Disaster scoping report, and a series of videos developed by the Baru Conservation Alliance.

