Combining Traditional Knowledge and Meteorological Forecasts in the Pacific to Increase Community Resilience to Extreme Climatic Events

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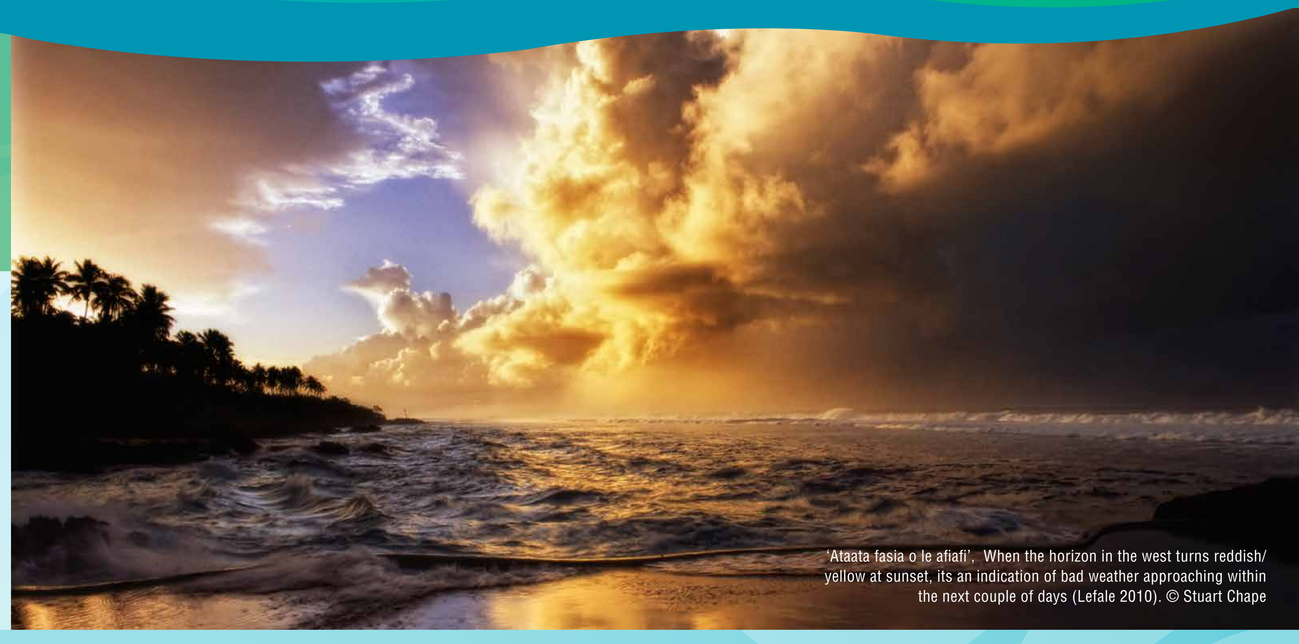
The rapid disappearance of traditional knowledge (TK) on weather and climate in the Pacific is a concern.

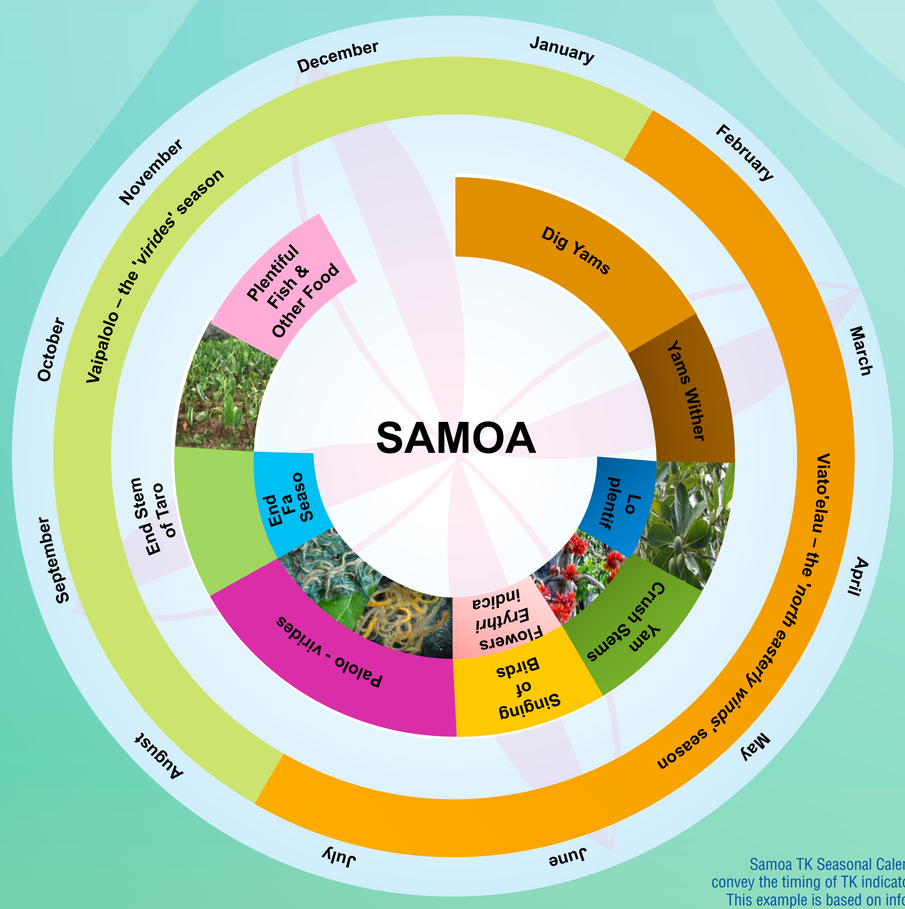
The loss of weather and climate traditional knowledge could also lead to the loss of traditional predictions, coping strategies, mechanisms and practices that have helped enable many Pacific island communities to cope. This would contribute to the reduction of community resilience to extreme weather events.



'Ataata fasia o le afiafi', When the horizon in the west turns reddish/ yellow at sunset, its an indication of bad weather approaching within the next couple of days (Lefale 2010). © Stuart Chape

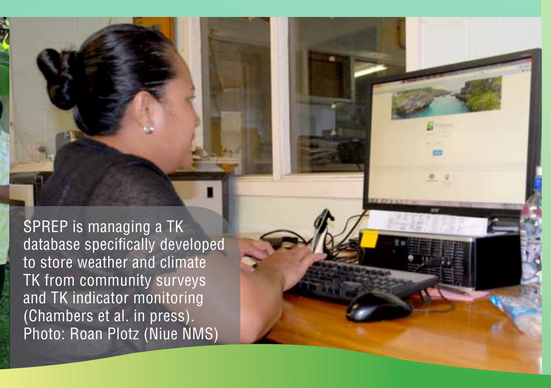
To address these concerns, the Secretariat of the Pacific Regional Environment Program (SPREP) in partnership with the Australian Bureau of Meteorology (BOM), national meteorological services (NMS) and communities from Niue, Samoa, Solomon Islands and Vanuatu are collaborating on a Climate Traditional Knowledge (CTK) project;

- To **preserve and combine** TK with contemporary meteorological forecasts;
- To **encourage** local communities to use National Meteorological Services (NMS) forecasts as well as traditional forecasts to increase community resilience to extreme events; and
- To **increase the recognition** of the value of TK for resilience to extreme events.



Samoa TK Seasonal Calendars are useful tools to convey the timing of TK indicators with the community. This example is based on information in Lefale 2010.

Staff from SPREP and Samoa Meteorological Services conducting TK monitoring. Photo: Faapisa Aiono



SPREP is managing a TK database specifically developed to store weather and climate TK from community surveys and TK indicator monitoring (Chambers et al. in press). Photo: Roan Plotz (Niue NMS)

Currently, Pacific communities can access information provided by the NMS's but they sometimes;

- have **difficulty understanding** the information provided
- have **delayed access** to weather and climate information
- have access but **mistrust the accuracy** of the information by NMS's
- have **no access** to any information provided by NMS's due to remoteness or isolation of communities.

When this occurs communities tend to refer to the TK and practices they know and trust. For instance, the '*Tera*', a coastal tree that rarely flowers, however, when it does flower in April or the end of May, 'a long dry season is certainly coming' (collected from elder on Panema, Vanuatu).

However, while they find that TK is still relevant, the timing of when the climate indicators such as animal behavior, fruiting and flowering of trees responding to seasonal changes and climate variability is now changing.

To increase community resilience, SPREP and the Bureau of Meteorology (BoM) have been working closely with NMS's from the **four** Pacific countries to:

i. **identify** local communities that uses TK for environmental forecast applications,

ii. **collect, document, monitor and store** the different traditional indicators used by the selected communities (e.g. TK surveys, monitoring forms and databases have been deployed)

iii. **assess** the reliability of the traditional systems and spatial extent of their accuracy

iv. **work with** NMS's to:

a. **determine** best methods for ***integrating*** the traditional and modern seasonal forecast systems

b. **disseminate** the ***integrated forecast*** back to the community.

Since July 2016, SPREP is working with BoM to transition the management of the CTK Project to the region. SPREP plans to assist Pacific Island countries with the ongoing collection, storage and integration of TK and contemporary forecasts, where lessons learnt will be shared across the wider Pacific community to aid climate resilience.

REFERENCES

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2. *Chambers, L.E., R.D. Plotz, T. Dossis, D.H. Hiriasia, P. Malsale, D.J. Martin, R. Mitiepo, K. Tahera, and T.I. Tofaeono (in press): A database for traditional knowledge of weather and climate in the Pacific. Meteorological Applications, DOI:10.1002/met.1648*

Climate and Oceans Support Program in the Pacific

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