TU NA INIMA, LUVU NA WAQA: AN ITAUKEI PERSPECTIVE ON DISASTER RISK REDUCTION

Melaia Tikoitoga
iTaukei Institute of Language and Culture, Fiji

The Potentials of Local Knowledge

Although classified as non-scientific, local knowledge have accumulated after centuries of extensive trial and error experiences from which people have learned. The knowledge system often passed by word of mouth is a broad knowledge of indigenous people on how to live sustainably.

iTaukei Measures in Disaster Risk Reduction

Traditional governance system

Governance in the indigenous Fijian landscape can best be described as consisting of several autochthonous chiefdoms. Habitually, no overall chief holds total dominion over the indigenous traditional governance, even though there have been claims in the past by one or two. This is where the role of the traditional herald comes into play. The herald's position is as mediator between the chief and the people and vice versa. However, in some remote islands where accessibility to such an information is limited, the Provincial Office upon hearing the alerts/warnings contact the *turaganikoro*[1] of neighbouring islands to relay the news. This is at times difficult especially given the remoteness of some islands and the ignorance of villagers to adhere to alerts/warnings of impending cyclones. Hence, the need to include the traditional social structure into cyclone policies. The inclusion of *matanivanua* or herald as means of information dissemination is vital. This position is not taken lightly by the members of the tribe. And yet through the words of Opetaia Dreketirua, we can see how beneficial the idea of the *matanivanua* would be to contemporary society: The *matanivanua*] are the chords of the land (*wa ni vanua*) binding together the people and their leaders. They press down (*bika*) and hide within their own hearts the angry words of the chiefs about the people, and they hide also in their hearts the angry words of the people about the chiefs; and for this reason they are called the 'Stomach of Evil' (*kete ni ka ca*) for their first responsibility is to preserve the land. As spokesperson, he is skilled in the art of persuasion and can sway the villagers to take heed of precautionary measures. In collaboration with the *turaganikoro*, he can inform the chief together with other clan leaders and in turn they inform the members of their clan. Clan leaders are respected by its members and hence will quickly mobilize reducing vulnerability.

1 *Turaganikoro*: The village headmen also known as a government administrator and representative in the village.

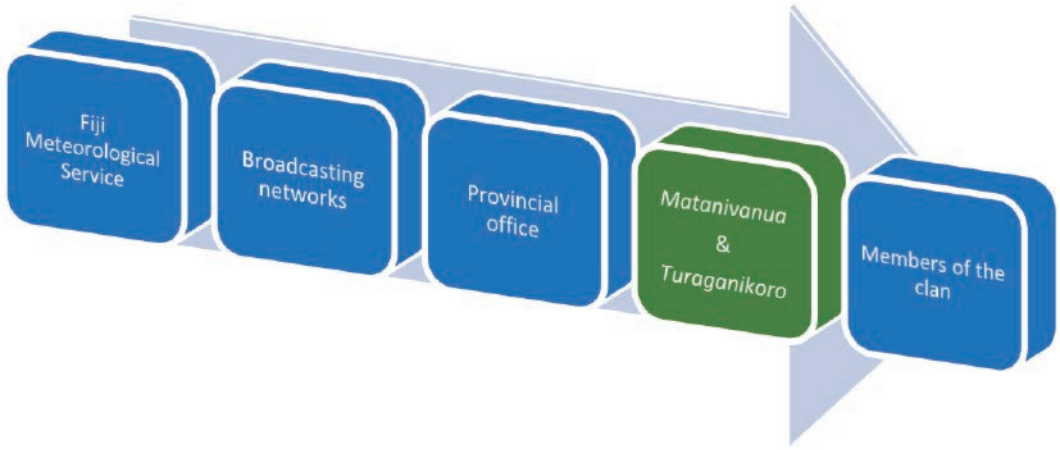

Figure 1 Proposed structure of information dissemination.

Traditional architecture

The overriding problem in withstanding the high winds of a tropical cyclone is that the connections between different elements of the building get damaged. Because of that the structural integrity or coherence of the building diminishes and the parts of it are destroyed. According to an article prepared by Vrolijks (1998), it is difficult to make sharp separation between a 'traditional' construction and a disaster resistant 'modern' housing as many of the principles for safe construction have been learnt from traditional construction methods. As earlier mentioned, bure normally have a thatched roof which are high and use a hipped configuration. This is held together with strong vines that tighten by smoldering over the years. The corner posts, according to Vrolijks, are fairly strong and buried sufficiently to resist uplift. If in case the roof collapse, there is ample room for occupants to crawl under it for the remainder of the cyclone.

According to Tuiteci (2018), the fixings in a traditional house is built for tropical cyclones. Compared with solid structures of modern housing, traditional houses are fixed to move. This is the result of organic materials used. He further elaborated that the soft raw materials absorb the wind pressure, allowing it to move into the house and then gets dissipated inside, this nullifies the pressure. In addition to this, tying still maintains the strength of the wood whereas hammering it has the opposite effect. This ductility or the ability to bend and sway without collapse is why the traditional method of house construction can cope with cyclone hazards and also earthquake (Vrolijks 1998).

Figure 2
Traditional house proposed as evacuation centres

Traditional early warning system

Traditional Knowledge system on early warning system is vast and below is but a portion on how the ancestors of the 4 villages in Udu predict of incoming cyclone. (It

Table 1 Traditional Knowledge indicators of cyclone as according to elders in the Nagasauva, Yasawa, Nabouono and Vunikodi

Indicator			Anomaly
iTaukei name	**Common name**	**Scientific name**	
a) *waitui* (sea)			
Vai	manta rays	*Manta birostris*	Sign of impending cyclone: jumping manta rays on a clear day with calm seas
Balagi	yellow surgeonfish	*Acanthurus xanthopterus*	schools found near the shallow end
Salala	chub mackerel	*Rastrelliger spp.*	a lot of mackerelle swim near the shallow
cakau	the coral reefs		waves crashing onto the reef can be heard from the village – 'like a thunderous noise at night'
ua	waves	-	difference in the wave pattern i.e. Small waves between bigger waves
sici	univalves	*Trochus nilotucus*	The univalves are harder to pull as they are firmly stuck to the rocks when women try to remove it with a knife during low tides
babale	dolphins	Delphinidae *stenella*	frequent sighting – 'as if they are playing'
b) *lomalagi* (stratosphere/air)			
Manumanu ni cagi mvk 1. *qiqi* 2. *kasaqa*	'birds of the wind' e.g. 1. Fiji white eye 2. Frigate bird	1. *Zosterops explorator* 2. *Fregata aerial*	These birds are usually found out at sea but when they're low-flying and near land, this change in behaviour is an indication of cyclone
katakata na draki	weather too hot	-	Unexplainable hot weather for more than a week
vula	moon	-	A ring around the moon
o	clouds	-	No longer going in the same direction
matanicagi	wind direction	-	always changing
beka	Tongan fruit bat Samoan fruit bat	*Pteropus tonganus, Pteropus samoaensis*	The bats mysteriously disappear from frequent resting spot
manumanu vuka	(any) high flying birds	-	Birds fly lower than normal
gogo	Black noddy	*Anous minutus*	This bird is usually found at sea but nearing a cyclone it is found flying towards land (like 'birds of the wind')
c) *vanua* (land)			
Gasau	reeds	*Eulalia japonica*	sprouts at the wrong time
Pi	yellow-jacket hornet	*Polistes olivaceus*	Yeloow-jacket hornets usually build their nest on to branches (away from predators) however if it builds its nest near the ground, this is a sign of cyclone
Draunivudi	plantain	*Musa spp*	In normal condition, plaintain shoots flower before it bends if the young shoot bents before it flowers, this is a sign of cyclone
Uto mvk buco, Asalea, ocoiRabe	breadfruit	*Artocarpus altilis*	The breadfruit bears more than three fruits in a branch (this is abnormal)
Tikau	Pacific yam, hard/ strong yam	*Dioscorea nummularia*	the shoots deviate back (i.e. it grows upwards but halfway through it, it does a 'U-turn' and goes back towards the earth)

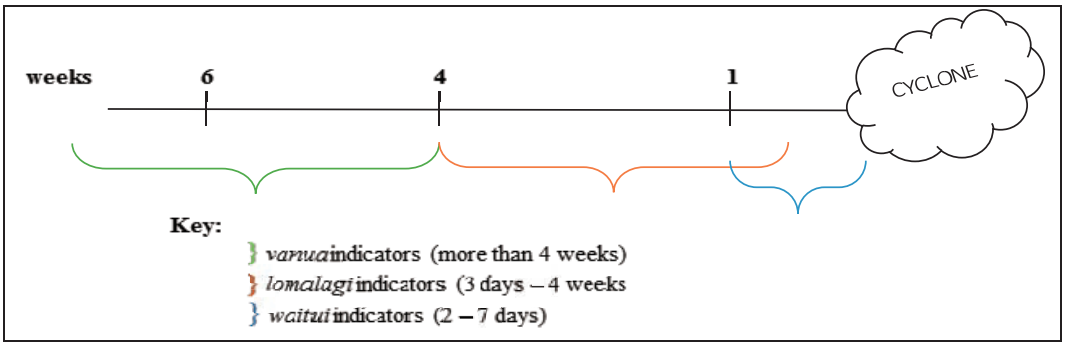

Figure 3 Timeline of cyclone according to traditional indicators supplied by the informants in Udu

is important to note that the indicators cannot foretell the wind speed). From the data collected, iTaukei traditional can be classified under three categories; *waitui* (sea), *lomalagi* (stratosphere/air), and *vanua* (land). The categories are determined by the environment in which the indicators are located (Table 1). This is best understood by Figure 3.

Apart from this, the iTaukei people for centuries know that there is a calendar used by the elders. This is taught in primary vernacular classes and shows how our elders navigate themselves as according to the time of the month it is. Hence, cyclone period is believed to be from November – April and often referred to as *Vula/ Cagilaba* or Cyclone month. Hence, the need to recognize and identify traditional early warning systems in Fiji as a means for preparation for impending bad weather is vital. Traditional Knowledge from land, air and sea indicators (in this order) occur a month/ week/days before a cyclone, this help prepare the community and in turns utilizes the Fiji Meteorological Service to validate local knowledge indicators.

Conclusion

To conclude, not all Pacific ideals or ways of being are appealing or beneficial to contemporary society, but they must be allowed to be brought to the fore, discussed, and understood. Those that fit in with Pacific peoples' contemporary notions of well-being, health, and security should be promoted, if only for the practical purposes of avoiding civil conflict and its associated costs. It is wasteful for international and regional organizations, bilateral and multilateral funding sources, nongovernmental organizations, and national governments (and taxpayers) to spend millions of dollars trying to 'clean up' devastated societies after the fact, when common sense dictates allowing those societies the time and opportunity to articulate their own approaches to the world and its multitude of developments. Many will argue that this is a luxury for which the modern world does not allow time. But if we in the Pacific do not take time, we will continue to suffer from the 'maldevelopment' that is presently affecting the region, as highlighted in the many reports issued by UN agencies, the Asian Development Bank, the World Bank, and regional organizations. We need to take stock now and to listen to the voices that have remained silent for so many years.

References

Tuiteci, S. (2018). Personal communication.

Vrolijks, L. (1998). *Disaster Resistant Housing in the Pacific Island countries*. Available at: https://www.shelltercluster.org/sites/default/files/docs/disaster_resistant_housing_in_the_pacific.pdf [accessed 14 January 2018].