

Food security and community development in the Pacific: Case studies from Fiji

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This paper considers the role of *bula vakavanua* (the Fijian way of life) in two indigenous Fijian communities, Saroni¹ and Bucalevu,² in helping rural villages achieve food security. Traditional mechanisms such as *solesolevaki* (cultural capital through collective work), together with monthly community work structures in place, can help households achieve food security. Revitalising these traditional mechanisms, encouraging wider use of them, and establishing legal frameworks for protecting traditional food security could have widespread benefits.

Food security in the Pacific and Fiji

In the past, inter-island exchange and regular cultivation and storing of famine foods underpinned food security in many parts of the Pacific (Campbell 2014). However, for some time this inter-dependency has, to an extent, been replaced by dependence on food imported from outside the Pacific (Campbell 2006). The increased price of imported food is also creating new concerns about food security and the vulnerability of Pacific island countries (McGregor et al. 2009). The situation is exacerbated by the decline in availability of famine foods and other traditional forms of disaster resilience (Campbell 2014). Together with a reduction in community-based food production and political, social, cultural, and economic changes, there has been a marked decline of food security in the Pacific island countries (Gaillard and Mercer 2013).

Traditional food security

Traditional foods are integral to the culture, history, and lifestyle of Pacific Island peoples and offer an insight into nutritional patterns and how they formed over time. As most PICs are ecologically vulnerable, food security was a cornerstone of most traditional Pacific Island societies. Through practising agroecological biodiversity, traditional food systems have been an essential element of ecosystem stability (Thaman et al. 2002). For example, tree crops like banana, plantain and breadfruit will survive flooding whereas yams, cassava and kumala (sweet potato) are resilient during cyclones. The abundance of production encouraged traditional food preservation and storage (Campbell 2006), including the use of *davuke* (underground storage) to preserve breadfruit, *kumala* and other root crops. These traditional food banks provided and allowed intra- and inter-community cooperation where mutual support, reciprocity, and indigenous exchange of food and food products were particularly important during times of hardship or extreme natural events within households, tribe, and *vanua* (Campbell 2015). For example, after Cyclone Winston in 2016 many districts in Fiji used resilient crops and famine food for survival. Famine foods in Fiji

include *dalo ni tana* (*Xanthosoma sagittifolium*), *via kau* (*Cyrtosperma merkusii*), *via kaile* (*Alocasia macrorrhiza*), (*Dioscorea bulbifera*), *bulou* (*Dioscorea bulbifera*), and *ota* (fern) (*Athyrium esculentum*) and (*Manihot esculenta*) cassava.

Research methods

Our research in Saroni and Bucalevu villages was on-going throughout 2018 and continued to 2020. We used the Vanua Research Framework (VRF) (Nabobo-Baba 2008) – a widely accepted cultural research framework used by Pacific researchers. The framework, derived from the Kaupapa Maori Research Framework (Smith 2013), includes indigenous worldviews by developing and encouraging approaches that value cultural ways of being (Nabobo-Baba 2008). The VRF recognises the concept of *vanua* (tribe and the integrated nature of land, people and culture) as central to indigenous Fijian identity. Adhering to the VRF principles helps build a web of trust, respect and lifelong relationships with research participants.

Our findings in Saroni village

The Saroni community-driven development initiative adopted its work structure from the Nayarabale Youth Farm work structure (Vunibola and Scheyvens 2019), which focuses on sustainable development for the community and improving general wellbeing. Four critical elements guide the weekly activities (see Table 1, next page).

The main focus in Saroni was the village commercial kava and taro farm. Driven by the youths, it involves the germination of planting materials in planter bags and transplanting to the fields. The villagers adopted the work plan structure which resulted in some immediate benefits. For instance, the plan gave the villagers a routine of work and better management of time. The work structure (Table 1, next page) was analysed by an elder of Saroni village who explained:

Eitou samai muria na I tuvatuva mai Nayarabale sa bau yaga ni eimami sa mai bula vaaivaarau. Sa rairai totoa na yalovata ni caa na solesolevai. Sa raici na duavata ka sa raici viro ga na toso ni teitei ka dau maka i mada dina ni maka tu na sede. We followed the work structure from Nayarabale, and we saw immediate benefits as it allowed us to work in a monthly routine, which is always difficult for village life. People now work collectively at the farm and we can see rapid increase in farming activities and farm expansion. This is impossible when people work alone without any capital to pay for labour (Joti Tasere, January 10, 2020).

However, the Saroni commercial farming intervention faced a hurdle three months after establishment. People

Table 1: Work structure of Saroni village

Week	Solesolevaki activities	Group involved	Venues
1	Youth farm	All youth members	Youth farm camp
2	Individual farms	Small youth groups who farm on the same location do their small <i>solesolevaki</i> , helping on the farms of other individuals.	Individual farm camps
3	Tribal food security	All tribe members	Village
4	Socio-cultural obligations (prescribed by the <i>vanua</i> , church, government or any visitors from outside the village)	All tribe members but the necessities for hospitality and cultural protocols (e.g., money, food, artefacts and transport) are provided by the youth farm. Members undertake activities like cooking and attending meetings and ceremonies.	Village

were having problems attending *solesolevaki* (collective work) and as a result, they were not able to follow their monthly routine. The people had a village meeting to identify the reasons for members not attending the work programs. They carried out *talanoa* (discussions) to work out their issues. The youth leader stated:

*Eitou sa vaataroga taucoo na veivuvale sa kai unei ni vuna levu dudua e yaco na leka iya ni maka na magiti. E ra dau lai vaakeketi magiti rava me ana ina na vuvale nib era na solesolevai, sa dodonu me eitou ca'ava ina e dua na a kai muri na loga ni yakona. We carried out discussions with all families in the village and we realised that the main contributing factor for the difficulties of following the routine is the inability of families to have access to enough food. People need to look for food first before they can attend *solesolevaki*. We need to look at ways to rectify the issue of food security first before the commercial kava farm venture (Netani Naivalu, January 10, 2020).*

To maximise attendance in *solesolevaki* programs the village reformed the work structure to boost the food security program which meant that time was allocated every week to food security both for individual families and for socio-cultural gatherings. For instance, the food security program in the third week is at the community garden which aims to provide food for socio-cultural gatherings and income. Two days a week (a total of ten days in a month) are dedicated to *solesolevaki* (collective work) on individual household vegetable gardens and staple crop farms. Arieta Vulakome, a mother and the women's group leader, commented:

Eimami sa mai yalokisi ni sa lewe levu e ra maka ni kai dau lao I solesolevai baleta ma sa une na ena asia. Ia na leka dina eimami dau sotava na yalewa ei na yakiti

ni dau maka na magiti e tu I vale. Na ena sa ca'a vaalevu na loga ni magiti sa eimami taleitaina na marama. We were disheartened by the disruption of the monthly program as we saw the benefits but in reality, the women and children suffered as the food at home was insecure. Developing our food gardens will alleviate many challenges we face (Arieta Vulakome, January 9, 2020).

The reformed work structure, with a focus on food security for communal and family purposes, was followed for the next five months. This not only allowed enough food for the families but resulted in easier access to the food gardens for women and children when the men were away doing *solesolevaki* (see Table 2).

Table 2: Reformed work structure of Saroni village

Week	Solesolevaki activities	Group and days involved	Food security
1	Youth farm	All youth members work on the commercial farm on Thursday and Friday	Tuesday and Wednesday for family food gardens
2	Individual farms	Small youth groups who farm at the same location do their small <i>solesolevaki</i> , helping on other individual's farms. Members do this on Thursday and Friday.	Tuesday and Wednesday for family food gardens
3	Tribal food security	All tribe (village) members. Members will do this on Tuesday, Wednesday, and Thursday.	Village members work on the community food gardens for <i>oga</i> (socio-cultural gatherings and obligations)
4	Socio-cultural obligations (prescribed by the <i>vanua</i> , church, government or any visitors from outside the village)	All tribe members but the necessities for hospitality and cultural protocols (e.g. money, food, artefacts and transport) are provided by the youth farm. Members do activities like cooking and attending meetings and ceremonies. This is done from Thursday to Saturday.	Tuesday and Wednesday for family food gardens

Evaluation after five months saw an improved village in terms of economic and community development and the general wellbeing of the community. By placing more emphasis on food security activities, sufficient food was produced for families, *to'ato'a* (extended family) and *matakali* (sub-clan).

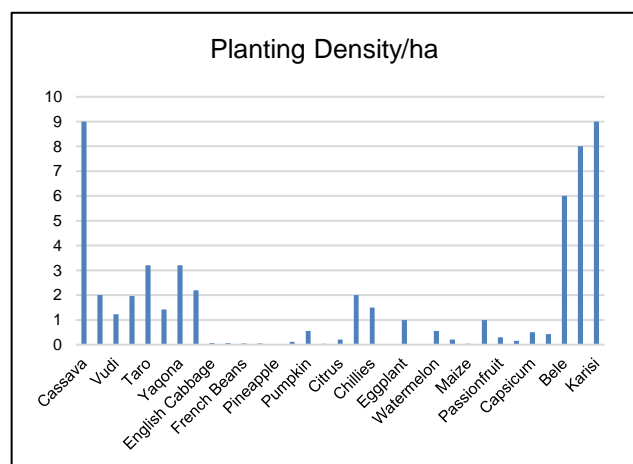
Saroni village crop records include a measurement of the food security status of every household showing their access to sufficient, safe and nutritious food that meets the food preferences and diet necessary for an active and healthy life. The crop record also shows the planting density

of each crop cultivated in the village. Planting density records provide a guide for farmers on total crops planted and the total land area developed allowing farmers to make informed decisions on what best to produce on the site.

Planting density in Figure 2 was reached using the following formula:

$$\text{Plant Density} = \frac{\text{Total number of plants on the ground in crop}}{\text{Required total number of plants per hectare in a crop}}$$

Figure 2: Total number of root crops and assorted vegetables at Saroni village



Research in Bucalevu village

In the past, the farming work structure of Bucalevu village was the combination of the indigenous Fijian calendar (*Vula Vaka-Viti*), which is based on planting and fishing seasons, and a monthly agriculture work program. To be successful, local NGO food production development projects needed people to be actively involved in the *solesolevaki* program. However, there was little individual commitment to the project although village leaders identified food security as a problem for every household. This led in 2017 to the rearrangement of the work structure. With traditional knowledge, the researchers, the Ministry of Primary Industries, and the Ra Provincial Office, designed a work structure that the village people were happy with (see Table 3).

Three months after restructuring to revive food security for each of the 42 households in Bucalevu, wellbeing (*bula sautu*) was achieved, as explained by one of the elders:

Ena rawati ga na bulasautu ena bula i vakavakarau kei na solesolevaki oqo nai yavu ni bula dina e Bucalevu. Wellbeing could be attained by managing our time following a structured work plan and, most importantly, through solesolevaki (collective work or cultural capital/currency) a resilient mechanism handed down from our ancestors (Waisake, July 2 2019).

Bucalevu managed to achieve food security, which allows them to practice '*veivoli vaka itei*' (exchanging food products within the community and other communities). This program has promoted the self-sufficiency of food to Bucalevu village, enabling them to accommodate socio-cultural obligations.

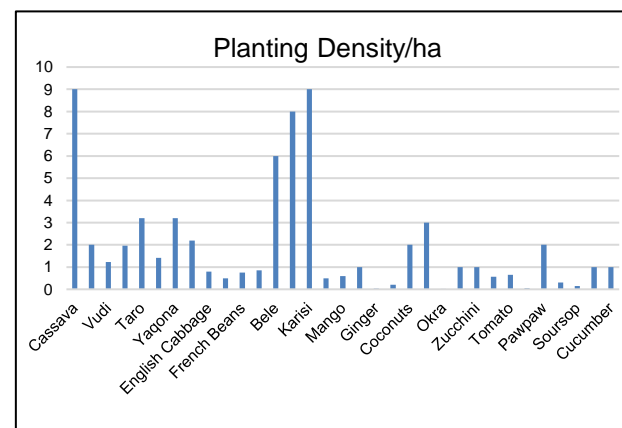
Table 3: Work structure of Bucalevu village

Time Schedule	Activity	Weeks	Focus	Hours	Comments
6am to 6.30am	Family prayer	1	Koro (Village)	8am to 12pm	2 days dedicated to this work; the other days given to individual
6.30am to 7am	Prep for kids	2	Mataqali (sub-clan)	8am to 12pm	2 days dedicated to this work; the other days given to individual
8am to 12pm	<i>Solesolevaki</i>	3	<i>Solesolevaki</i>	8am to 4pm	Working collectively on the farms
12pm to 1.30pm	Lunch	4	Matanitu (government visit)	8am to 4pm	3 days dedicated to this work; the other days for <i>solesolevaki</i>
1.30pm to 4pm	Individual farms	Family time is essential to every household for sharing some traditional knowledge purposes for every young generation.			
4pm to 8.30pm	Family time				
9pm	Bedtime				

Record keeping is also essential for Bucalevu farmers and a successful farm manager keeps accurate records and has established a sound recordkeeping system. A crop record includes the date of planting, crop or assorted vegetable name, the number of plants planted, and expected harvested time. Planting density on Figure 3 was attained using this formula:

$$\text{Plant Density} = \frac{\text{Total number of plants on the ground in crop}}{\text{Required total number of plants per hectare in a crop}}$$

Figure 3: Total number of root crops and assorted vegetables at Bucalevu village



Maintaining these records enable the farmers to make informed decisions for the future and better organise their land-management practices, including crop rotation and pest control.

Food as a cultural component

Food is a critical component of Pacific culture and other indigenous groups globally, and this is visible in any function or gathering. Having enough food for the family and socio-cultural obligations therefore are the ultimate aims for indigenous Fijians in rural Fiji. A way to achieve this demand is to include food security programs in the work structure followed by village members. In both case studies, following the daily routines is found to contribute to *bula vakaivakarau* (disciplined village life); *yalomatua ni vakayagataki gauna* (wise use of time) and *solesolevaki* (social and cultural capital) where people pool resources and labour for the common good. Once there is an abundance of food to cater for household needs and socio-cultural obligations, villagers are able to use crops as a commodity to sell at the market for family income.

Discussion

Community-based development in the Pacific has been the focus of local and international development agencies for many years with the aim of improving the wellbeing of Pacific people. However, there remains the serious question – how should community-development structures be planned and executed to achieve the aspired goals? We have found that community development interventions do not always recognise the interrelated and interconnected components or reality of specific geographical locations. Development plans, feasibility structures and frameworks are prepared in advance of workers being recruited to implement the intervention. Due to the interwoven systems of *bula vakavanua* (way of life signified by the culture, tradition, and customary land), community development initiatives can be challenging and such challenges occur when community development initiatives focus specifically on the project itself rather than having a holistic view of the highly connected, interwoven community components which can include social, physical, environmental and spiritual factors (Holland 2006; Morse et al. 2013).

One of the major components of rural subsistence communities in the Pacific is the capacity of *matavuvale* (family) to attain food security. Food security in the communities studied not only refers to families' access to enough food but also access to nutritious foods that suit their dietary needs and socio-cultural obligations (Campbell 2015). A critical element of indigenous economic development on customary land in Fiji is being able to provide financial support for socio-cultural responsibilities, which also contribute to business sustainability and improve community partnership (Vunibola and Scheyvens 2019). Similarly, families need to have access to enough food for subsistence consumptions and also for socio-cultural gatherings like weddings, catering for

church gatherings, and other social occasions and obligations. The new food security program enables the establishment of separate farms catering for gatherings, which ensures that families have enough food and there is sufficient for social-cultural obligations.

Food security for families in the community provides a stable platform for sustainable community development projects. Governments or non-government organisations fund community projects which could also be community driven (for instance, Saroni case study). The findings of this research suggest that food security not only improves the participation of village people but is also linked to the longevity and sustainability of any community development initiative.

Notes

1. Saroni village is in Dogotuki district, Macuata.
2. Bucalevu village is in Nakorotubu district in west Viti Levu.

References

- Campbell, JR 2006, 'Traditional disaster reduction in Pacific Island communities', *GNS Science Report 2006/38*, Institute of Geological and Nuclear Sciences, Wellington.
- Campbell, JR 2014, 'Climate-change migration in the Pacific', *Contemp Pac*, 26(1), 1–28.
- Campbell, JR 2015, 'Development, global change and traditional food security in Pacific Island countries', *Regional Environmental Change*, 15(7), 1313–1324.
- Gaillard, JC and J Mercer 2013, 'From knowledge to action: Bridging gaps in disaster risk reduction', *Progress in Human Geography*, 37(1), 93–114.
- Holland, JH 2006, 'Studying complex adaptive systems', *Journal of Systems Science and Complexity*, 19(1), 1–8.
- McGregor, A, M Manley, S Tubuna, R Deo and M Bourke 2009, 'Pacific island food security: Situation, challenges and opportunities', *Pacific Island Bulletin*, 24(2), The Australian.
- Morse, W, W McLaughlin, JD Wulforst and C Harvey 2013, 'Social ecological complex adaptive systems: A framework for research on payments for ecosystem services', *Urban Ecosystems*, 16.
- Nabobo-Baba, U 2008, 'Decolonising framings in Pacific research: Indigenous Fijian Vanua Research Framework as an organic response', *AlterNative (Ngā Pae o te Māramatanga): An International Journal of Indigenous Peoples*, 4(2), 140–154.
- Smith, LT 2013, *Decolonising Methodologies: Research and Indigenous Peoples*, Zed Books Ltd.
- Thaman, RR 1990, 'The evolution of the Fiji food system', AAJ Jansen, S Parkinson, AFS Robertson (eds), *Food and Nutrition in Fiji: A historical view*, 1, The University of The South Pacific, Suva, 23–108.
- Thaman, RR, M Meleisea and J Makasiale 2002, 'Agricultural diversity and traditional knowledge as insurance against natural disasters', *Pac Health Dialogue*, 9(10), 76–85.
- Vunibola, S and R Scheyvens 2019, 'Revitalising rural development in the Pacific: An itaukei (indigenous Fijian) approach', *Development Bulletin* 81, 62–66.