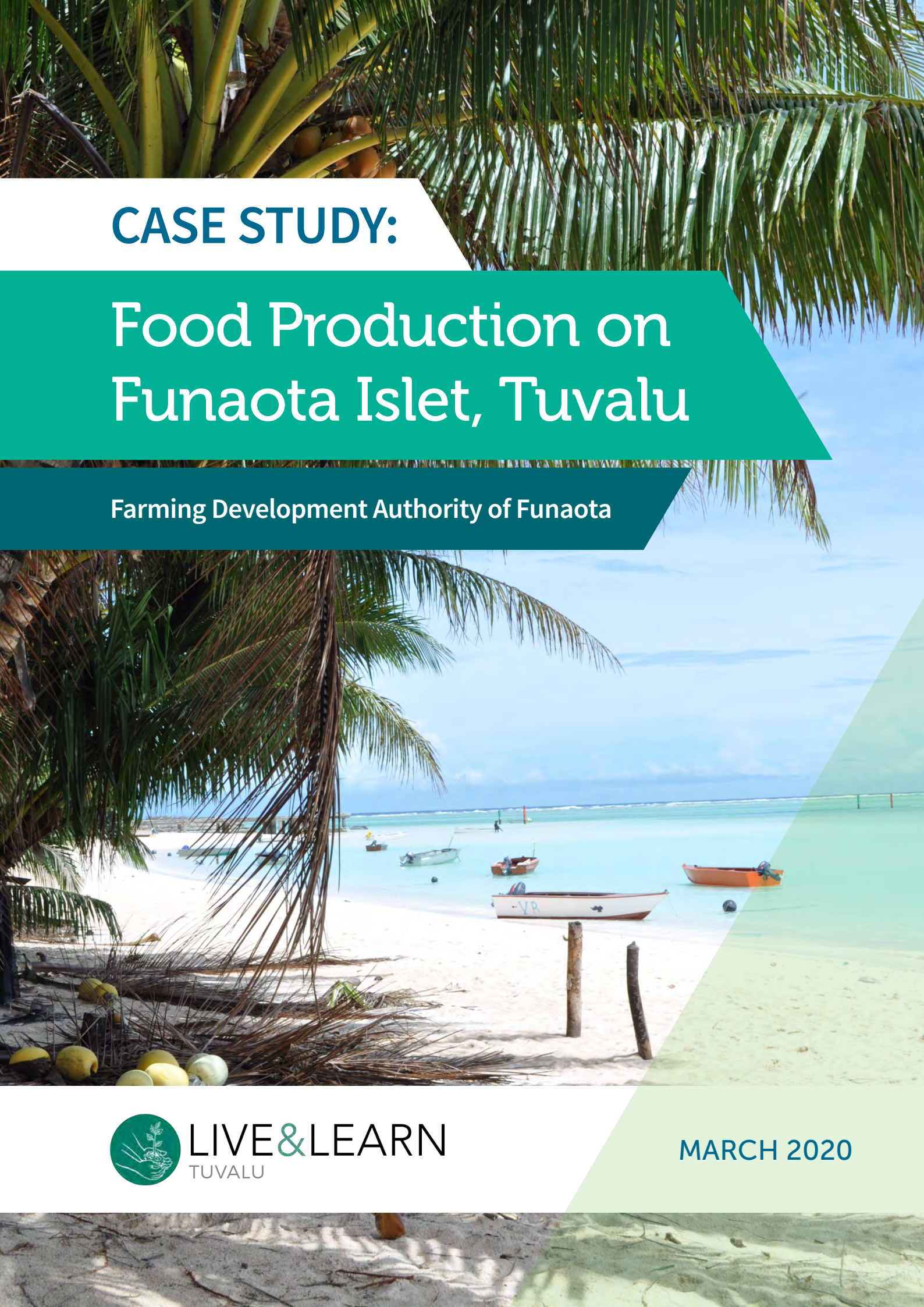




CASE STUDY:

Food Production on Funaota Islet, Tuvalu

Farming Development Authority of Funaota



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Tuvalu Food Futures Project

Funded by the Department of Foreign Affairs and Trade, the Tuvalu Food Futures Project aims to deliver low cost community-based adaptation activities to address climate change and build resilience in the Pacific.

The ongoing project focuses on increasing production and consumption of local food, promoting knowledge and awareness on the benefits of local food, reviving traditional integrated farming practices, increasing land productivity and improving nutrition.

The Tuvalu Food Futures Project has produced this case study on agricultural activities on Funaota islet in the Nukufetau Atoll to document lessons learned for localization of small scale food security activities in Tuvalu.





Food Security in Tuvalu

Tuvalu is the world's fourth-smallest country, at just 26km squared with a population of approximately 11,000 people. Located in the South Pacific, this independent island nation is extremely vulnerable to the effects of climate change, impacting food security and accessibility. Growing food is very challenging due to issues like available land space for cultivation, the impacts of climate change including more frequent and severe weather events, poor soil quality, seawater inundation, and the geographically poor soil of atoll islands.

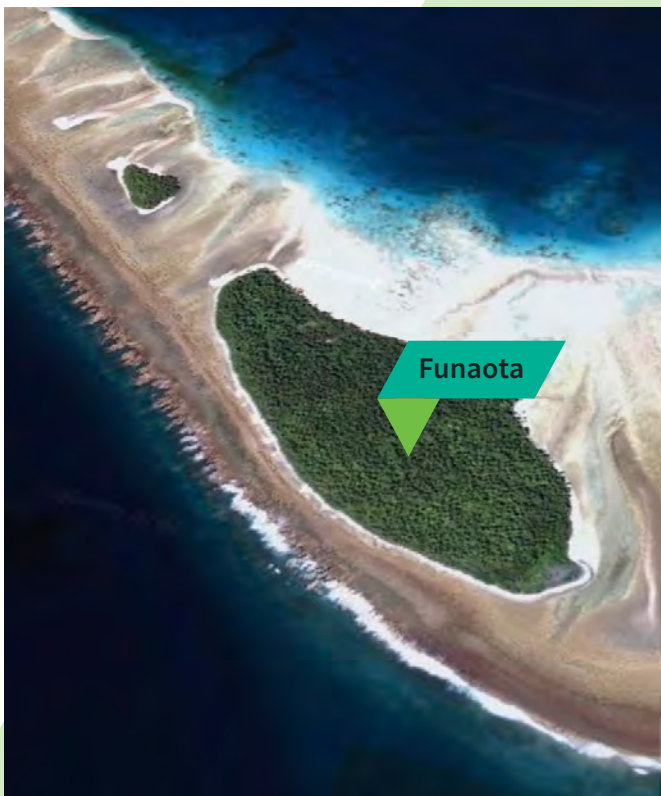
Nukufetau Atoll is 167 km northwest of Funafuti, the capital of Tuvalu. The atoll consists of 5 major islets and 32 smaller islets, with a total land area of 3.3 km². The main village is located on Savave islet, while all agricultural activities (piggeries and pulaka farms) take place on the neighbouring islet of Fale. Pulaka pits are also present on Lafanga and Motulalo islets, while some agriculture also takes place on Funaota islet. Few export opportunities and limited access to imports for Nukufetau makes Funaota an important source of local food for the community and a way for the population to meet healthy dietary requirements of fruits and vegetables.



Many communities in Tuvalu now rely on imported processed and low-quality frozen food, particularly in the capital, which is impacting national health by increasing the prevalence of non-communicable diseases (in particular diabetes and cardiovascular diseases).

While imported food has increased food security through availability, they also expose communities to low quality foods as many are high in calories but low in vitamins and minerals, posing a threat for the population. A decline in the availability and accessibility of local produce is not only negatively impacting community health but is also contributing the loss of traditional recipes, and thus the loss of a core aspect of cultural identity.

The delayed arrival of cargo ships due to bad weather is a frequent occurrence for the outer islands of Tuvalu, another contributor to food insecurity. At the time this report was written Tuvalu had recently been impacted by Cyclone Tina and the some of the population was experiencing food shortages for imported products such as flour, sugar, biscuits and rice. This increases the need for the safeguarding of local food sources.



Agriculture on Funaota Islet

Funaota Islet is located at the northern point of the Nukufetau Atoll, 8 miles from the main settlement at Savave, and only accessible by boat. Funaota is communal land that has been used as an agricultural cultivation space since the 19th century. It was originally used by German traders who farmed the land to make copra.

When the traders left, the main settlement of Nukufetau supplied volunteers (in couples of 2 or 3) to work the land, providing fish from the surrounding ocean as a form of payment. From the late 1970's to the early 1990's the islet was utilized by the Nukufetau Women's Initiative. During their time they managed to generate an income for the local women involved and erect a seawall that still stands today. Despite being a successful farming operation, their work ended due to opposition from the local village chiefs concerning income and profit distribution from communal land.

After the departure of the Nukufetau Women's Initiative the land sat idle and overgrown until 2008, when former Prime Minister of Tuvalu Enele Sopoaga made plans to rejuvenate the land with a push in parliament for the 'Farming Development Authority of Funaota.' This project was created as a response to the economic crisis and an effort to provide jobs for young men who might potentially lose their employment as seafarers.





Project Outputs



Funaota provides a source of employment for families in the community in the form of laborers at the site



Nukufetau residents continue to view Funaota as a food source for the community. Funaota supplies the market every fortnight with fresh foods like breadfruit and banana



The site meets the community's obligations for cultural and national functions. This is done in the form of supplying pigs, which were provided for the Pacific Island Forum for example.

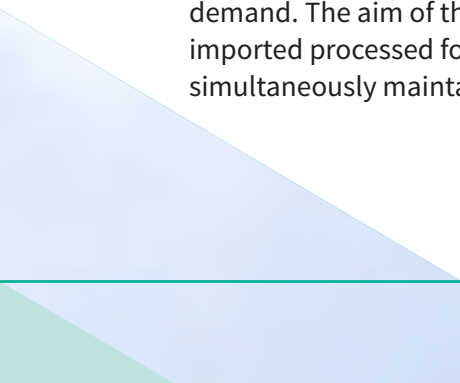


The site has provided training for the community on home gardening



Key Learning from experience of the Farming Development Authority of Funaoa

Currently food production in Tuvalu is limited, with supply insufficient to meet consumer demand. The aim of the FDAF, to increase local crop production and decrease the reliance on imported processed food, has the potential to improve the overall health of the community, while simultaneously maintaining cultural food traditions in relation to locally grown produce.



Governance



The beauty of this model is that you cannot default. It's public money and property.

The Farming Development Authority of Funaoa is a legal body that exists on its own and follows a local business model. According to former Prime Minister and Special Adviser to Funaoa, Rt Hon. Enele Sosene Sopoaga (63), *“The beauty of this model is that you cannot default. It's public money and property.”*

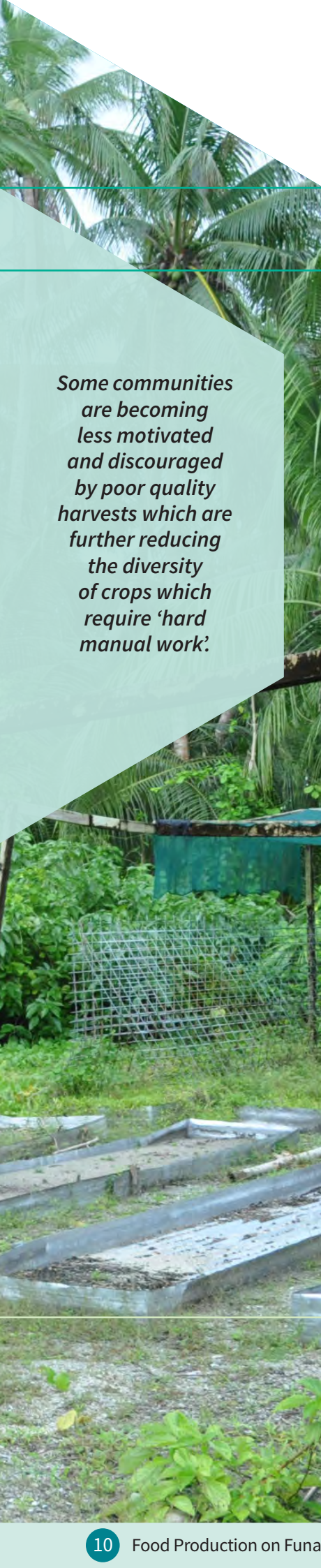
By creating a company firm, the model has moved away from ownership by the village chiefs and Kaupule, although the land is leased freely under an agreement with the village chiefs. All decision-making regarding Funaoa is made through the Board of Directors. The Board of Directors consists of five members the Island Woman's Association, Youth Association, Kaupule and Falekaupule. Stakeholders for the Farming Development Authority of Funaoa include the Agroforestry Project, SPC, the Department of Agriculture and the UNDP Ridge to Reef Project.



When the SPC Agroforestry project first assisted Funaota (2006-2008) the garden was established without sustainable initiatives. An example of which was the lack of training for laborers on gardening, livestock management and marketing of products from the islet. The learning experience from this is that the approach to Funaota need to be holistic, as opposed to single focused, as it has been treated in the past. Any assistance to Funaota needs to be for a minimum of five years, in order to enable the islet to develop enough capacity to manage the site adequately.

The profits from the Nukufetau Market can range from anywhere between AUD\$50 to AUD\$300 per fortnight, depending on the crops. The money from this sale goes directly to the Funaota Collection fund and is reviewed at the end of the financial year by the Board of Directors. After the review of expenditure 15 percent of any profit goes to each shareholder, and then a portion is given to management to reinvest back into the space.

Funds received from market sale remains within the project fund and is not used for any other purposes. Currently there is no financial support from Funaota to the residents of Nukufetau. There have been no discussion of a trade of any kind in exchange for leasing the space. Anecdotaly it has been reported that the Kaupule provides around AUD \$50K to assist with labourers at Funaota. This cannot be confirmed as the project bank account statements are not with the governing committee but may be with the former manager.



Technological Challenges

Some communities are becoming less motivated and discouraged by poor quality harvests which are further reducing the diversity of crops which require 'hard manual work'.

Currently, much of Funaota is overgrown and underutilised. Produce that is growing is harvested and brought to the Nukufetau market on a fortnightly basis. In 2019 the main produce sold at the market from Funaota consisted of breadfruit, brown coconuts and germinating nuts. The Funaota piggery is another initiative with an overwhelmingly positive response from people on the main settlement, as it has removed the need for members of the community to maintain their own pigs as they can now purchase them for cultural events from the islet.

Goods other than crops can also be produced on the islet and provided for sale for the Nukufetau population. There is a strong desire for compost from Funaota due to the limited access to local soil and purchasable soil. Funaota could sustainably produce compost on site utilising the green waste on the islet and manure from the pigs at the piggery. With access to improved resources, such as a larger shredder to produce compost in greater quantities and make better use of the green waste on the islet, gardening on Funaota has the potential to become more efficient and self-sustaining. There is evidence of limited groundwater development that could assist these farming activities on Funaota.¹

Vegetable production has not been successful for several years for a variety of reasons, including inappropriate selection of crops for the climate, and knowledge gaps in providing suitable growing conditions for short season annual vegetable crops. It was noted in Live & Learn's 2019 Rapid Assessment of Perceptions that, "*Some communities are becoming less motivated and discouraged by poor quality harvests which are further reducing the diversity of crops which require 'hard manual work'.*"

¹ *The Tuvalu Ridge to Reef Project - Groundwater investigations on Nanumea and Nukufetau atolls*, Andreas Antoniou, Aminisitai Loco, Anesh Kumar, Peter Sinclair, Geoscience, Energy and Maritime Division of the Pacific Community, 2019

Originally vegetable seedlings were supported by the SPC Agroforestry Project, today vegetable seedlings for planting on Funaota are provided freely by the Taiwan Technical Mission, who have operated community gardens in the capital of Funafuti since 2004 and Vaitupu island since 2015. The Taiwan Technical Mission also provides fertilizers, watering cans and other supplies to Funaota upon request. Agriculture inputs for Funaota are currently determined by the Agriculture Extension Officer, who will make requests to the Taiwan Technical Mission based on seed availability and demand. This decision dictates what is planted as well as the division of land at Funaota. The seeds cultivated and supplied by the TTM consist mainly of cucumber, pawpaw, cherry tomatoes, cabbage, pumpkin and capsicum.

Vegetable production would be more successful with contextualised introduction of tropical permaculture gardening methods that improve soil fertility through creation of an appropriately designed “Food Forest” approach that combined food production from lower maintenance perennial plants (such as tree crops like breadfruit varieties, pandanus, sweet coconuts, bananas, etc) to provide shaded areas for high yield, shorter season crops such as cherry tomatoes, cucumber, pumpkin, beans and capsicum. Live & Learn’s introduction of Biofilla growing containers will contribute to higher yields in smaller spaces with a reduce workload in the long term and can be used in areas where seawater seeps through.

Also, with limited knowledge on climate adaptive agricultural practices for food security new initiatives are needed to encourage awareness within the community alongside improved climate training for Funaota staff. A lack of training on the marketing side of the Project was also noted by Enele Sopoaga, who advocates for idea generation and workshops on creating marketable products.



Social Challenges

The labour-intensive training is designed to provide practical guidance on the preparation of seedlings, compost and netting.

There are currently six employed staff members working on Funaota, all of whom either work the land or manage the piggery. Labourers apply for the positions they want through the Board of Directors and are hired through that same process. Their work is managed by the Agriculture Extension Officer, with guidance from Enele Sopoaga, the Special Adviser to Funaota. There is currently no on-site manager, a position they have been struggling to permanently fill since 2018 according to the January 2018 FDAF Progress Report. The Progress Report states that there is no proper planning of work per day and staff lack confidence and good vegetable growing skills.

Currently all training for staff of the project is managed by the Taiwan Technical Mission, who work closely with the Agriculture Department. The labourers selected for training are chosen by the Kaupule, who are also required to conduct follow up with staff post-training. The training is a one month long practical work in community gardens operated by Taiwan Technical Mission in the capital, provided at no cost, and participants receive a daily allowance of AUD\$15-20 per day. The labour-intensive training is designed to provide practical guidance on the preparation of seedlings, compost and netting. It is also designed to help the labourers adapt to challenging outdoor working conditions in the heat, sun and rain.

Many workers at Funaota resigned shortly after receiving their training, which led to trained staff being replaced with untrained staff who have little to no knowledge and experience of gardening. More investigation is needed into finding the reasons for staff resignations.

Improving incentives and conditions for the workers who live and work on Funaota could decrease the high resignation rates. On-site contextualised training in permaculture methods that will increase yields and profits may also increase motivation and this would also inspire greater engagement by the stakeholders in Farming Development Authority of Funaota. Due to the previous success of the Women's Initiative, inviting more women to be involved in the project could be a way to generate more community interest in increasing productivity and yields.



Lessons for Localisation of Food Security Initiatives

The philosophy of the Farming Development Authority of Funaota was to create a balance of local job opportunities with sustainable island business. This is possible at Funaota, and other suitable sites in Tuvalu, if the following challenges are addressed:

- Site selection allows for space for food production, and suitable soil and water resources, and is accessible by local people who are happy to work there.
- Contextualised training is provided that is based on adapted techniques that combine tropical permaculture food forest approaches with perennial plants and trees and intensive growing of high yield annual vegetables using container gardening (Biofilta) and composting.
- More frequent coaching and follow up sessions is needed, including training not just on cultivation but also for climate change adaptation and marketing. This should be combined with investment in sea walls and protection of garden investments from sea water inundation.
- Engagement of stakeholders through appropriate governance structures that provide transparency and accountability to all stakeholders, and agreed sharing of yields and profits.
- Identifying ways to increase participation or engagement of women's groups – in both the practical work of gardening and the decision-making of governance – that is linked to education in families and schools on the links between nutrition and health.
- Commitment by the National Government of Tuvalu to produce enough local food to meet the need of the population. This will lessen the high dependency on imported foods as well as encourage the marketing of local produce.
- To encourage stock piles of locally preserved foods at household level, as well as growing foods at communal land in order for the islands to have food reserves.



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