

**TECHNICAL REPORT**

# **A LEARNING JOURNEY TO THE KINGDOM OF TONGA**

**Accelerating Transformative Change  
in Nutrition-Sensitive Value Chains  
in Pacific Islands**

**Promoting Nutritious Food Systems  
in the Pacific Islands**



## ABOUT CTA

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# Acknowledgements

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Last, but not least, special thanks are extended to all participants and delegates for their collaboration and willingness to share knowledge, exchange information and learn from each other for the benefit of all Pacific Islands.



# List of acronyms

<b>CTA</b>	Technical Centre for Agricultural and Rural Cooperation
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>GroFed</b>	Grower Federation of Tonga
<b>ICT</b>	Information and Communication Technology
<b>IFAD</b>	International Fund for Agricultural Development
<b>MAFF</b>	Ministry of Agriculture and Food, Forests and Fisheries (Tonga)
<b>MEIDECC</b>	Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications
<b>METI</b>	Matuaileoo Environment Trust Inc
<b>MORDI TT</b>	Mainstreaming of Rural Development Innovation Tonga Trust
<b>NCD</b>	Non-communicable disease
<b>NGO</b>	Non-governmental organisation
<b>PIFON</b>	Pacific Islands Farmers Organisation Network
<b>PIPSO</b>	Pacific Islands Private Sector Organization
<b>TNAP</b>	Tonga National Action Plan
<b>VCC/AI</b>	Value Chain Coordinating/Agricultural Innovation
<b>WHO</b>	World Health Organization

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# Executive summary

Pacific Island countries suffer from alarming rates of non-communicable diseases (NCDs) and are consistently ranked as the most obese and diabetic in the world. At the centre of this NCD crisis is the underlying problem of consumption of processed imported foods; high in fat, salt and sugar, displacing nutritious local produce; crops and fish from the daily meals of Pacific people.

In order to help address this problem, the Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA), in collaboration with MORDI Tonga Trust, the International Fund for Agricultural Development (IFAD) and the Pacific Islands Private Sector Organisation (PIPSO), organised three activities in the Kingdom of Tonga from 3 - 6 December 2018. The integrated four-day event was held under the theme Transforming Nutrition-Sensitive Value Chain Development in the Pacific Islands within the framework of the CTA/IFAD/PIPSO Innov4AgPacific project. The overall objective of which is to “Strengthen the capacity of Pacific Island countries to develop strategies and programmes that would increase accessibility of poor rural peoples to nutritious and healthy foods”.

Over 80 delegates from the Innov4AgPacific seven target countries Fiji, Kiribati, Samoa, the Marshall Islands, the Solomon Islands, Tonga, and Vanuatu representing a diversity of occupations, including students, farmers, agripreneurs, ministry representatives, processors, experts and NGO leaders attended the official opening ceremony. The three activities held concurrently were the ‘Pacific AgriHack Lab’, the ‘Innov4AgPacific Learning Journey’ and the ‘Tonga National Roundtable’.

Around 25 participants took part in the Innov4AgPacific Learning Journey where they were given tours of various agricultural and fishery enterprises around Tonga. It provided an invaluable opportunity for participants to speak with different stakeholders, exchange ideas, and observe the full food production chain from plantations to packaging plants.

The 2018 Pacific AgriHack Lab brought together finalists in the regional competition to identify and further develop existing or new ICT applications for agriculture and agri-business/value chain development in the Pacific. The highlight of the event was the final day of presentations where participants each pitched their ideas and innovations in front of a panel of judges. Far from just being a competition, the event included a two-day workshop to develop the business skills of the ICT innovators and the finals served as a useful regional forum for sharing information on how ICTs can be used to improve the livelihoods of Pacific Island farmers and fishermen.

In the Tonga National Roundtable, delegates evaluated and discussed the Tonga National Action Plan (TNAP) and four thematic Regional Action Plans to promote nutritious food systems in Pacific Island States. These were formulated in 2018 with the aim of strengthening the capacity of farmers and fishermen and improving value chain performance. Metuisela Falesiva, Head of the Food Division in Tonga’s Ministry of Agriculture and Food, Forests and Fisheries (MAFFF) presented the TNAP.



# Introduction

The ‘Transforming Nutrition-Sensitive Value Chain Development in the Pacific Islands’ multi-stakeholder tripartite Innov4AgPacific project event held in Nuku’alofa, Tonga from 3 – 6 December 2018, took place in the last month of an extremely tough year for Tongan farmers, fishermen, local businesses and exporters. Tonga’s agriculture and fisheries sector was devastated by Category 4 Severe Tropical Cyclone Gita, which struck the country on 12-13 February 2018. It was reportedly the most intense cyclone on record to hit Tonga and the latest of a number of increasingly frequent and intense cyclones to appear in the region in recent years. In Tonga, as in most Pacific countries, no national insurance was available to bring immediate relief to farmers and fishermen and help them to recover quickly. For the over 40 delegates from six Pacific countries who travelled to Tonga to attend the event, the trip provided an invaluable opportunity to learn about nutrition-sensitive value chains, stakeholder partnerships, the potential of ICTs, the importance of innovation, and how local foods can help to reduce NCDs. For the 60 or more Tongan contributors and observers, the event provided an opportunity to learn from other Pacific Islanders and to gain a greater understanding of Tonga’s potential through the perspective and scrutiny of others.

Regional partnership and cooperation became an underlying theme of the event with delegates forging contacts and actively exchanging ideas and resolutions in dialogue with one another. The value of collaboration was a common message delivered by speakers in their presentations, as well as by participants in their feedback and group discussions. Delegates reflected on hardships shared with other Pacific Islands, from the arduous journey of recovery from natural disasters to spirited convictions of alleviating the hardships faced by farmers and fishermen in their communities. Those who participated in the Learning Journey field trips saw first-hand how Tongan farmers, entrepreneurs and NGOs were dealing with the challenges and taking advantage of the opportunities in the agriculture and fisheries sector.

Another key outcome was the instilling of confidence in young participants, particularly the 2018 Pacific AgriHack Lab finalists – most aged in their twenties. The AgriHack Lab provided an encouraging environment for these bright and energetic young individuals, who all shared the same ‘spirit of innovation’ and determination to revolutionise and empower value chain actors in their nations through ICT development. In a highly contested AgriHack competition, participants each presented their innovations with the hope of winning a €5,000 prize; money which would be used to bolster their companies/NGOs. Despite the competitive environment, the event was a win-win situation in the eyes of the finalists because the winning innovations would benefit the Pacific as a whole. This sentiment can be best summed up in the words of one finalist, Kanaan Ngutu from Kiribati, who, in his feedback on the AgriHack, stated, “It’s valuable not just for one Pacific Island but for all of us. Whatever solutions can be applied in Kiribati, I can take to other Pacific Island countries. The expectation is that ideas are turned into projects that can be deployed in other parts of the Pacific.”

# The Learning Journey

The goal of the CTA/IFAD/PIPSO Project ‘Promoting Nutritious Food Systems in the Pacific Islands’ is to strengthen the capacity of Pacific Island governments, farmer and private sector organisations and sub-regional institutions to develop strategies and programmes, as well as mobilise financing, that can increase poor rural people’s access to nutritious and healthy food. It is also referred to as the Innov4AgPacific project.

Driven by a wish to share knowledge and experiences and forge new contacts, this second Innov4AgPacific project Learning Journey that took place in the Kingdom of Tonga was designed to foster cross-learning and build partnerships for accelerating transformative change in support of ‘nutrition sensitive’ value chain development in Pacific Island States. The spirit of the journey was one of joint discovery, learning and decision-making. Several good practices had been identified in the Kingdom, where the NCD crisis is highest and the government and its partners have enunciated national policies and demonstrated their commitment to joint action through various programmes.

This Innov4AgPacific Tonga Learning Journey featured success stories and lessons learned from community-based and private sector project initiatives in the Kingdom. It provided a learning platform for project beneficiaries to exchange experiences on key Innov4AgPacific project activities, namely the: (1) innovation grant facility; (2) community nutrition proof-of-concept seed funding; and (3) capacity building of producer organisations for value chain development and to agree on the way forward to ensure replicability, scalability and continuity in post-project interventions.

Engaging the private sector is seen as an innovative and practical solution for addressing the region’s acute food and nutrition-related challenges. And so too the adoption of a bottom-up community-based approach that links local action with policy reform and ensures increased income and improved nutrition outcomes. Building capacity for change is therefore key if farmers and communities are to be empowered, become increasingly self-reliant, and own the value chain development process for sustainable impact post interventions.

The Learning Journey provided representatives of various producer/farmer/exporter/community-based organisations, small and medium-sized enterprises, financial institutions and government ministries from the Project’s seven target countries (Fiji, Kiribati, Marshall Islands, Samoa, Solomon Islands, Tonga, and Vanuatu) with a transformational opportunity to improve knowledge, practice and behaviour and build national and regional alliances in support of value chain development in Pacific Island States.



# Summary of main events

## Field trips: learning sites/spaces

The Innov4AgPacific Learning Journey featured a 2-day tour of several agriculture and fishery enterprises around Tonga's main island of Tongatapu, with the objective of promoting and consolidating support for the development of 'Nutrition-Sensitive Value Chains'. A diverse delegation of about 25 farmers, processors, government and industry representatives, exporters, NGO leaders and key experts from seven Pacific Island countries took part in the field trips. During the visits, managing directors and CEOs of Tongan companies, government representatives and farmer and community organisations offered in-depth tours of their processing facilities and plantations, and engaged in Q&A with inquisitive participants. The experience provided a unique opportunity for the participants to gain insight into Tonga's agriculture/fisheries industry and to observe the full scope of value chains and multi-stakeholder relationships in Tonga. Non-participants who accompanied the delegation in the Learning Journey included local guides sourced from Tongan ventures, such as MORDI TT, and two CTA officials from the Netherlands.

## Innov4AgPacific Learning Journey field visits

1. GroFed – Hu'atolitoi Prison plantations
2. Women in Agriculture Group
3. Tinopai Coconut Farm
4. Nishi Trading Co Ltd.
5. MORDI Tonga Trust
6. South Pacific Mozuku
7. Pacific Sunrise Fishing
8. MAFFF Wharf Export Processing Facilities

## GroFed – Hu'atolitoi Prison plantations

The first field visit allowed participants to observe multi-cropping methods used by Tongan farmers. Leading the way in promoting the system is the Tonga Growers Federation (GroFed), a prominent NGO that offers consultation and technical advice to Tongan agriculturalists. GroFed claims over 1,500 registered members with the mission statement of supporting Tongan farmers to “achieve profitable and sustainable growth”.

During the field visit, participants looked at mixed/intercrop plantations belonging to Tonga's largest penitentiary Hu'atolitoi Prison located near the village of Vaini. They were greeted by a GroFed official who pointed out the intercropping of kava, maize, plantain, papayas and taro. The methods are employed to help reduce the spread of diseases in plantations and facilitate the growth of primary crops because of shelter offered by secondary crops. Participants observed fields of nutritious produce, such as bananas, beans, cabbage, capsicums, papaya, and tomatoes. Rare varieties included a type of plantain called 'Fiehopa' which is locally renowned for helping to combat diseases such as diabetes.

All of the allotments are maintained by Hu’atolotoli Prison inmates, who are used as agricultural labour as a form of rehabilitation. Inmates are taught about farming and how to be self-sufficient with the land. Hu’atolotoli inmates consume mostly vegetarian meals with crops grown from the plantation. The crops are also sold to the local market with proceeds going to the government to help cover the costs of running the prison. GroFed provides technical advice to Hu’atolotoli, such as how to implement multi-cropping and sanitation methods. Mixed cropping is not new in Tonga, as it has many benefits, next to organic control of pests it also provides a consistent flow of income.

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“It’s an awesome opportunity to network and share knowledge with other farmers and small- and medium-enterprises and to see first-hand what they’re doing. This cross-learning journey gives you a comprehensive scope of, I guess, the whole value chain from the farm to the packhouses, to inspect the export facility and how it is done, which is what we are looking to do for Vanuatu. Having seen this whole value chain, it’s very useful for us.”

Obed Tui Matariki, Timataka Associates, Vanuatu



## Tinopai Coconut Farm

Participants visited the Tinopai Coconut Farm in Vaini where they looked at irrigated taro and arabica coffee fields and coconut processing facilities. They were addressed by the farm's managing director Pousima Afeaki, who pointed out the farm's irrigation system – a network of drip water pipes supplied by water pumped out of a nearby well. His taro plantation is one of the healthiest plots on the island. The drought has affected many taro farmers – and Tinopai has invested in an irrigation system to produce large healthy taro that is highly sought after by processors and the overseas market. According to Afeaki, running the pump was cheap with electricity costs being around 100 pa'anga (€40) for a few months. Five centimetres of water are pumped into the taro fields per week. Following Cyclone Gita, he has had to start collaborating more with his Pacific neighbours to continue to supply his export customers with produce.

The main exports of Tinopai Coconut Farm are coconuts, which are prepared for export at the farm. Afeaki stated that his company exported mature coconuts to Australia and were currently trialling frozen coconuts as a possible export. In addition, Tinopai Coconut Farm manufactures crispy taro chips for the domestic market; the popular snack is distributed to retail stores throughout Tonga.

## Women in Agriculture Group

The next part of the Learning Journey was a field visit to 'Women in Agriculture', a trio of retired women with a shared passion for farming. The women, Amelia Tu'inukuafe, Salote Fukofuka and Luseane Taufu, were the first to export papaya to New Zealand. Following the destruction of Cyclone Gita in early 2018, they have diversified their production and are now managing plantations of papaya and yams for export and the domestic market as well as watermelon, cassava and coconuts for the domestic market. They actively engage in the physical work of cultivating crops on the land owned by the husband of one of the women.

According to Tongan custom, agriculture is the traditional role of men, an assertion further emphasised by Tongan land laws, which state that only men can inherit land. Despite these policies, the women said they worked for the love of farming and enjoyed being able to grow their own food. They want to 'disrupt' the notion that 'farming' is a male-dominant activity and encourage more females into the industry.

Women in Agriculture also grow flowers, which are marketed to tourists and hotels. They are planning to change their name to 'Women in Horticulture and Tourism' because of their contributions to the tourism industry. Unfortunately, the group told delegates that they had been unable to secure financial aid from the government to fund the introduction of an irrigation system for their fields.



## Nishi Trading Co Ltd.

Learning Journey participants toured the plantations, orchards and HACCP (hazard analysis and critical control point) certified packhouse facilities of Nishi Trading Co Ltd, which is the leading exporter of Tongan agricultural produce. Its primary export is butternut squash with its major market destinations being China and Japan. Nishi Trading also processes potatoes, red onions, watermelons and maize products for export as well as for Tonga's domestic market contributing to the country's drive towards import substitution.

Nishi Trading is engaging in research projects as well as conducting trials on different intercropping methods themselves. They have a display of a 1-acre trial mixed-crop plot with sandalwood, arabica coffee beans, pineapples, breadfruit, bananas, plantain and pele (Tongan spinach). The managing director of Nishi Trading, Minoru Nishi, showed participants the orchards of citrus trees, mandarins, naval oranges, Tahitian limes and other fruit varieties that he hoped to commercialise. Minoru stated that the citrus trees were being grown as part of the 'Fruit Tree Citrus Project' – a national project that aims for every Tongan household to have a citrus tree in its backyard. However, the orchards require a lot of expertise and maintenance to control pests and facilitate growth. Management methods include multi-cropping, mulching for moist retention, constant monitoring for pests, and the application of agricultural lime to address calcium deficiencies in the soil.

Nishi Trading acquires much of its produce from smallholder farmers (in particular watermelons) and invests resources; financial and human in training smallholder farmers to ensure they can meet export quality standards. Crops collected for export are packaged and meticulously recorded in Nishi Trading packhouse facilities using a computerised system. In keeping with international best practice on traceability, and to conform with HACCP audit certification requirements, every crate/bin of produce is graded and barcoded to record the name of the grower, where the produce was grown and the variety. A crop diary is also used to monitor the practices of each of the farmers to ensure that their work complies with market requirements. The packhouses are highly modernised with blast freezers, conveyor belts, industrial fans and extra-tight fly screens. The high standard production system is implemented, not only to ensure efficient production, but also to meet the strict bio-security requirements of overseas markets.



## MORDI Tonga Trust

In the final field visit of the first day, participants visited orchards, a nursery and plantations operated by MORDI Tonga Trust (MORDI TT) – a leading innovative NGO in agriculture and rural development in Tonga and the Pacific Region – which works primarily with smallholder farmers and rural communities. MORDI TT became an official NGO in 2009, growing rapidly from working with 29 communities to serving 120 communities across Tonga in 2018. The NGO originally focused on assisting isolated rural communities in the outer islands of Tonga but began working on the main island of Tongatapu, assisting the sector as a whole. Soane Patolo, MORDI TT programme coordinator, gave participants a tour of his organisation’s research orchards and plantations. He described a 5-year development project called the Tonga Rural Innovation Project (TRIP), aimed at developing smallholder farmers and communities in Tonga, which is funded by IFAD.

MORDI TT also receives funding from the New Zealand government, and has established strong partnerships with the private sector and other agencies. One research project currently undertaken by MORDI TT looks at establishing partnerships between local farmers and businesses to support import substitution efforts. He cited work with a local bakery to substitute imported flour with locally-made breadfruit flour. Patolo stressed the importance of nurturing trust and building good relationships between all stakeholders. He stated that his organisation was geared to mending any breakdown in communication between value chain stakeholders.

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“The best learning experience is the importance of having linkages between the private sector, NGOs, farmers and the community. I’m going to take back the ideas that I picked up from observing the community working together with the private sector and NGOs. It’s a good example for us because, in Samoa, NGOs and the private sector are not connected. It also aligns with what we are doing; that is promoting nutrition in the community. There are nutritious plants in Samoa that people are planting but they don’t know that it’s edible so what we are trying to do is to promote these nutrient-dense plants. For example, the drumsticks and the breadfruits, these are nutritious plants that we are promoting.”

Aloema Fretton, METI Samoa



## Pacific Sunrise Fishing

Pacific Sunrise Fishing is one of only two Tongan Tuna fishing companies operating in Tonga and owned by Eddie and Rosemarie Palu. The self-sufficient company has been fishing in Tongan waters for more than 13 years and operates six deep-sea fishing vessels. The operation includes its own fishing packing facility and freezers, as well as a retail outlet that sells fresh fish to local customers. Pacific Sunrise exports to five different countries including China, Japan (primarily), and the United States, as well as supplying fish locally to 65 restaurants.

Learning Journey participants toured the enterprise where they observed the clean facilities and adherence to good manufacturing and hygiene practices. Palu told participants that the market appeal of her company was the freshness of their fish meat as a result of the relatively short fishing trips in Tonga. Pacific Sunrise exports tuna by air and thus fishing schedules are completely dependent on available flight schedules.



## Wharf Export Processing Facilities MAFF

Another facility which impressed many participants was Tonga's public Wharf Exporting Processing Facility, which is accessible to small-scale/first-time exporters to package their goods for export. To use the facility, a nominal fee for small farmers is being charged, to process and pack their root crops for export. The facility is operated by the Tonga National Food Authority, established by MAFF in 2016. Apart from maintaining the facilities, the Authority offers support and training to help inexperienced exporters reach the international standards required by overseas markets, and actively motivates and encourages small businesses to grow and export.

**“It was good to see the Ministry’s facilities in Tonga where the lesser advantaged groups can come and do their own packaging and fulfil their export requirements whereas in the Solomon Islands there currently are no facilities at all.”**

**Mark Johnston, Rural Development Project, Solomon Islands**



## South Pacific Mozuku

South Pacific Mozuku, a small to medium-sized enterprise (SME), harvests seafood not normally consumed by Tongans. One of these unique seafoods is Limu Tanga'u, a rare variety of seaweed known for its nutrient and health benefits, which is highly valued in Asian markets. The company was established by a Japanese expatriate, the late Masanori Kawaguchi, and carried on by his son Masa Kawaguchi. Sustainability and conservation of the seaweeds are a primary concern and focus for the company, which only harvests the seaweeds in designated zones. South Pacific Mozuku was among the first awardees of the Innov4AgPacific Innovation Grant Facility which received funding to access technical expertise and buy small equipment to improve product and process efficiencies and grow their business.



# 2018 Pacific AgriHack Lab

The 2018 Pacific AgriHack lab held in Tonga from 3 – 5 December 2018 brought together 19 participants from six Pacific Island countries across a diversity of occupations from students to entrepreneurs. All expressed a common passion for bettering the lives of their people and for developing ICT tools, applications and platforms to facilitate the work and improve livelihoods of farmers and fishermen and earnings of SMEs. Over the 3-day event, participants were trained by key experts during five workshops on various topics covering business models, investment readiness, technical soundness, access to finance, intellectual property rights and business presentation delivery (pitching).

The highlight of the Pacific AgriHack was the competition ‘Pitching Day’ where the finalists each presented their innovations and ideas before a multi-disciplinary panel of public and private sector judges for evaluation. The three winners were announced at an evening cocktail where they were each awarded €5000 to scale-up their ICT innovations.

Winners of the 2018 Pacific AgriHack competition were: Solomon Islander young community activists, Hika Gonne and Watson Anikwai; Fijian entrepreneurs, Kenneth Katafono and Mohammed Moishin; and Fijian nutritionist and ICT researcher, Ateca Kama and Irene Yee Chief.

Follow-up mentorship and additional technical support tailored to the needs as well as those of other finalists will be provided during upscaling of the apps.

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*“This workshop is very valuable because I believe that after this workshop, maybe next year, we will develop at least one or three ICT applications that will solve a problem. They will not only be valuable for one Pacific Island but for all. Whatever solutions can be applied in Kiribati, I can take to other Pacific Island countries. The expectation is that ideas are turned into Pacific-wide ICT solutions that benefit the sector.”*

**Kanaan Ngutu, Profound Enterprises, Kiribati**



## 2018 AgriHack finalists

Names	ICT innovation	Company/organisation	Country
Ana Maria Saili	Farmers Online Marketing App	SkyEye	Samoa
Ateca Kama	MyKana – Grow Your Own Food – Backyard gardening component	National Food and Nutrition Council	Fiji
Irene Yee Chief	MyKana – Grow Your Own Food – Backyard gardening component	USP Centre for Flexible Learning	Fiji
Fosters Evers	AgriConnection	Private enterprise	Fiji
Kunal Prasad	AgriConnection	Private enterprise	Fiji
Hika Gonne	MalaAgri Mobile App	Malaita Youth in Business Association	Solomon Islands
Watson Cyrus Anikwai	MalaAgri Mobile App	Malaita Youth in Business Association	Solomon Islands
Joanna Bourke	CocoNew Portal - Connecting Farmers in Real Time	CocoNew – The Agency	Tonga
Kanaan Ngutu	One-Stop Marketplace	Profound Enterprises	Kiribati
Kunal Kaushik Prasad	Pest Information and Education Platform	USP	Fiji
Kushal Prasad	Smart Mobile Irrigation System	USP	Fiji
Mohammed Moishin	Farmer Market Access & Transport Mobile App	TraSeable Solutions	Fiji
Kenneth Katafono	Farmer Market Access & Transport Mobile App	TraSeable Solutions	Fiji
Onesmas Taman Willie	Tukunoa-Mauri – Information for Life E-market & Information Platform	Community organisation	Vanuatu
Percival Papalii Grant	Connecting Farmers with Buyers App	Natural Foods International	Samoa
Rinesh Sharma	Automated Hydroponics System	Aeroherb	Fiji
Sam Goundar	Blockchain Application for Fruits and Root Crop Farmers	USP	Fiji
Ajendra Prasad	Track and Trace – Fish Blockchain App	USP	Fiji
Zefi Kevinette Keritina	E-market Place – B2B & C2B	Zai Na Tina Centre of Organic System	Solomon Islands

# Tonga National Roundtable




The Tonga National Roundtable event featured a multi-stakeholder discussion of Nutrition-Sensitive Value Chain Development and a review of Tonga’s National Action plan presented by Metuisela Falesiva, Tonga’s Head of Food Division of MAFFF at the Tanoa Hotel in Nuku’alofa on 6 December.

The overall purpose of the workshop was to validate Tonga’s National Action Plan (TNAP) in preparation for final endorsement by all stakeholders. One of the key elements of the action plan was the need to establish innovation platforms that would enhance value chain development and performance to improve incomes and nutrition outcomes for all.

Tonga’s National Action Plan was formulated in early 2018 to address four key themes covering challenges in agribusiness and value chain development:

- (i) Nutrition – to achieve a reduction in NCDs and increased income from investments in local food crops and fisheries value chain development;
- (ii) Finance – making farmers bank ready and banks farmer ready;
- (iii) ICT – robust communication system for growers; and
- (iv) Insurance – robust insurance package for farmers.

In his presentation, Falesiva detailed initiatives and various national policies in Tonga that aligned with the objectives of Tonga’s National Action Plan. He also pointed out challenges, as well as resolutions identified by his Ministry and other stakeholders.



Judith Ann Francis, senior programme coordinator for CTA, presented a rapid response on the four thematic regional action plans concerning nutrition-sensitive value chains. She encouraged Tongans not to overlook the potential of their local nutritious resources, referring to seaweed harvesting company South Pacific Mozuku.

CTA technical officer Jana Dietershagen presented the ‘Innov4AGPacific’ – a website and online platform connecting people involved in improving agriculture and rural livelihoods of Pacific Islanders. The website provides news updates on CTA, IFAD and partners’ and Innov4AgPacific initiatives in the Pacific, and serves as a repository of topical information resources on value chains, agribusiness development and related agricultural/aquaculture issues ([www.innov4agpacific.pipso.org.fj](http://www.innov4agpacific.pipso.org.fj)).

Following the presentations, delegates were organised into country working groups to evaluate and update their National Action plans and the four thematic Regional Action plans. They later presented their reviews, all of which were positive and supportive of the plan’s key elements. Some of the ideas advocated by the various working groups included imposing taxes on second grade meat imports, and making it a national priority to have clean/traditional food systems.

In a closing address, Minoru Nishi of Nishi Trading Ltd in Tonga told delegates that regional collaboration was essential and advocated the idea of organising regional insurance for Pacific countries as natural disasters were becoming a frequent and intensifying problem in the region.

## Key points of the Tonga Action Plan presented by Metuisela Falesiva

- Tonga’s National Action plan is geared towards addressing Tonga’s NCD crisis.
- The plan aligns with the national multi-stakeholder ‘Agriculture Sector Plan,’ which aims to achieve a 10% growth in all vegetable exports, 10% decline in meat imports and 10% growth in rural incomes.
- Recent MAFFF initiatives that fulfil the TNAP include: the importing of livestock (sheep, pigs and goats) to improve Tonga’s genetic research and to reduce the importing of non-healthy meat (mutton flaps); and collaboration with the Ministry of Health in implementing the Mai e Nima project, an awareness campaign encouraging healthy meals.
- Promoting the production of nutritious foods in Tonga and enforcing policies to protect vulnerable nutritious food resources such as seaweed (Limu); MAFFF conservation initiatives include policies requiring villages to have designated areas of ocean where nobody is allowed to fish.
- No national insurance exists for Tongan farmers and fishermen. The importance of national insurance was underlined in 2018 when Cyclone Gita devastated Tonga’s agricultural sector. The Tongan government facilitated soft loans but, according to Falesiva, these were not sufficient.
- ICTs for enhancing value chains in Tonga were minimal in the action plan. Falesiva cited an online weather forecast service (Tonga Climate Services for Agriculture) and stated that many farmers fishermen accessed online banking via their mobile phones.



# Key messages/lessons learned

## Health

1. Policymakers must always comprehend the potential knock-on effects that any law/regulation/curriculum could have on the health of the general population.
2. NCD rates are influenced by a complex variety of factors or ‘socio-economic and environmental determinants of health’. For example: advertisements encouraging people to eat unhealthy foods.
3. Policymakers should study other countries that have succeeded in combating NCDs, for example in New Zealand where national policies have reduced the number of people smoking and improved dieting.
4. Poverty is a factor that needs to be considered as farmers profit heavily from selling unhealthy products such as tobacco.
5. Preferences for imported foods could be changed by instilling pride in traditional cuisines with campaigns such as the ‘Pacific Food Revolution’ led by celebrity chef Robert Oliver.

## Import substitution

1. Import substitution is a lucrative market for Tongan producers. According to MORDI TT, in 2015 the total value of imports was measured at \$428.9 million pa’anga (€163.5 million). Local products such as Tinopai Coconut farm crispy taro chips have found success on the domestic market and are sold at many retail/wholesale stores in Tonga. MORDI TT is working closely with local bakeries, seeking to replace imported flour with locally made breadfruit flour.

## Sustainability

1. Exporters depend on smallholder farmers to meet export quotas as well as to increase outputs. There is a push by key stakeholders (MORDI TT and Nishi Trading Co Ltd.) to train smallholder farmers in order to raise the quality and consistency of produce they supply.
2. Sustainability as an industry is something that all actors must be aware of. For example, Tonga’s squash industry deteriorated during the 1990’s, dropping from 30+ exporters to only four exporters in 2018. According to Minoru Nishi, the industry imploded because there were too many exporters.

## Entrepreneurship

1. Entrepreneurship in Tonga (and other Pacific Island States), especially to be able to compete in foreign markets, requires a lot of determination, perseverance and skill in forming relationships/partnerships. The profession is challenging because of volatile markets and the devastating impacts of natural disasters (which have become more frequent in the last decade). For example, Nishi Trading faced bankruptcy in the past and endured years of financial loss. The year 2018 was a struggle for the agriculture sector as a whole, because of the damage caused by Severe Cyclone Gita.

## Exporting

1. Overseas markets have strict bio-security requirements. For example, China requires that export packaging processing facilities use extra tight fly screens. Compliance can be costly for small enterprises.
2. Many overseas markets pay attention to freshness as well as to the ‘story’ of products – where the products come from and how they were made/caught.

## National agriculture and nutrition projects

1. Many projects have been initiated in Tonga to develop smallholder farms, improve the diets of Tongans and raise awareness of healthy eating. Examples of initiatives include: fruit tree citrus project; Mai e Nima school garden and nutrition project; Tonga Rural Innovation Project II (TRIP II); Tonga Agriculture Sector Plan and the Tonga National Action Plan.

## Impacts of natural disasters

1. Nishi Trading’s exports of watermelon fell from 400 t in 2017 to 77 t in 2018 because of the effects of Cyclone Gita and drought.
2. Prices of vegetables soared in the months following Cyclone Gita to the point where it was cheaper to buy imported cans of vegetables (beans, carrots, celery, tomatoes).
3. There were no exports of Noni juice in 2018 because Noni fruit growth was setback by Cyclone Gita (according to Noni exporter Ishi Taro).
4. No national insurance exists for farmers and fishermen, which puts their livelihoods/business at the mercy of nature.
5. Climate change threatens the food security of Pacific Islands as exemplified by Cyclone Gita.

## Tongan cultural attitudes towards farming

1. Growing food is the traditional role of men in Tonga and it is considered unladylike for women to participate in agriculture; however, attitudes are changing as women farmers gain acceptability as growers. One factor for this is because women farmers are finding success in the industry.
2. By Tongan law, only men can inherit land; however, women are allowed to ‘hold’ land.
3. Farming is often looked down upon by many Tongans as the last career choice.

## Fishing in Tonga

1. One advantage of selling fish in Tonga is that there is very little or no wastage as Tongan consumers prefer to buy entire unfiletted fish, and local pig farmers buy unwanted bits of export tuna.
2. Fish (especially tuna) is arguably Tonga’s most lucrative natural resource with Tongan waters covering over 700,000 km<sup>2</sup>. Despite this, there are only two tuna fishing companies in Tonga.
3. Tuna exports from Tonga appeal to foreign markets because of its freshness, due to short fishing trips and time to market.

## Partnerships

1. Relationships, partnerships and mutual understandings between actors are vital to having a successful and efficient value chain. All actors in the value chain have a role to play in making it successful (farmers, NGOs, exporters, processors, banks/financial institutions, government).
2. Regional collaboration benefits all Pacific countries as partnerships can facilitate national value chain development. Successful ICT strategies developed in one Pacific country can be applied in another.

## ICTs

1. Pacific Island countries need to make the ‘jump with ICTs’ – using ICTs to enhance efficiency, access markets, strengthen value chains and promote nutritious foods.
2. E-commerce provides a global digital market and opens the door to more business opportunities. Financial technology increases access to financial services, especially for remote communities.

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“I come from the Ministry of Health (Fiji) and one of our targets is to get our colleagues involved with digital health. So this forum has assisted with that goal. Aside from that, some of the lessons we learned in the field trips I can actually take back because my ministry works closely with the stakeholders in agriculture.”

Ateca Kama, NFNC, Fiji



# Conclusions

The CTA/IFAD/PIPSO Innov4AgPacific tripartite multi-stakeholder event held in Tonga from 3-6 December 2018 empowered its participants with a greater understanding of nutrition-sensitive value chain development and the benefits of ICTs. A recurring message in the feedback of Learning Journey participants was the importance of coordination, collaboration and strong partnerships between all actors engaged in value chain development. ICT participants stressed the need for Pacific countries to be innovative and to pursue ICT solutions that are geared towards enterprise development and sustainability.

Another recurring message was the benefits of regionalism in bringing together Pacific innovators and experts in a forum to share their ideas and solutions. As one AgriHack participant remarked: “The expectation is that ideas are turned into viable solutions that can be deployed in other parts of the Pacific.”

A major success of the Tonga National Roundtable was the bringing together of the Tonga government, farmers, bankers and private sector to validate the Tonga National Action Plan. The common goal being to resolve Tonga’s NCD crisis and facilitate growth in local food crops and fisheries value chains for improved nutrition, incomes, resilience and sustainability, fulfilling the theme of the event ‘Transforming Nutrition Sensitive Value Chain Development in the Pacific Islands’.

This Learning Journey has demonstrated that, in Tonga’s scenario, access to nutritious and healthy food for the rural poor is not unduly limited, except in the event of devastating natural disasters such as cyclones. This is primarily because most Tongan families (including the rural poor) own land, are engaged in subsistence agriculture, do not pay rent or land rates, and derive their income mostly from remittances sent from family overseas. Most Tongans reside on family inherited allotments or dwell on lands owned by the Tongan nobility/royal family – who customarily do not charge rent. Families typically own or hold two pieces of land: a town allotment (where they reside); and a bush allotment (where they grow crops). This traditional system arose from early land laws implemented by Tonga’s first Christian king Tupou I in the late 19th century, and was designed with the intention that the Tongan population be self-sufficient and free of debt.

Lack of accessibility to healthy and nutritious foods is therefore a bigger problem for urban dwellers who live far from their entitled bush allotments and even worse for a growing number of Tongans who do not own land. Many families living on the main island of Tongatapu originate from outer island groups (Vava’u, Ha’apai, Ongo Niua) and thus cannot easily access their entitled allotments on these islands.

For the typical rural household that engages in subsistence agriculture, accessibility to healthy local or home-grown foods is threatened by increasing urbanisation, a growing population, changing lifestyles and, perhaps most of all, climate change. Delegates witnessed first-hand the devastating impact of the February 2018 Severe Tropical Cyclone Gita on Tongatapu, which temporarily halted agricultural production, leaving the main island virtually dependent on imported foods sold at local retail/wholesale stores. With plantations ruined and homes destroyed, the rural poor were the worst affected.

The problems of accessibility for Tonga's landless and urban poor also reinforced that these issues are not symptomatic only of Tonga but also impact other Pacific Island States. It also confirmed that, through knowledge sharing, joint learning, innovation and collective action at local, national and regional level, buttressed by strong public-private-producer-community partnerships, the challenges to agribusiness and value chain development can be comprehensively addressed for the benefit of all.



# Recommendations

## 1. Change the focus from 'poor rural' to the whole of society

Accessibility to nutritious foods is a greater concern for landless Tongans and urban dwellers than it is for the rural poor who generally own land and are active in subsistence farming. Furthermore, Tonga's NCD crisis affects the whole society with the majority of the Tongan adult population being obese. According to the medical journal *The Lancet*, in 2013, 88.3% of Tongan women and 83.5% of Tongan men over the age of 20 were overweight. Many would argue that there is no lack of accessibility to nutritious foods in Tonga (or other Pacific Islands), based on the fact that local produce is relatively cheaper than most imported foods, as well as the fact that the majority of Tonga's population are involved in agriculture/fishing.

## 2. Confront the reasons why Tongans (and other Pacific Islanders) eat imported foods

Consulting the public to identify the primary reasons why consumers choose to eat unhealthy foods or divulge in unhealthy habits (smoking/alcoholism) is vital to any project that aims to improve the diets and health of Tongans/Pacific Islanders. If accessibility to nutritious foods is not a serious challenge for most Tongans, then what are the primary factors contributing to unhealthy eating? If consumers are well aware of the impacts of unhealthy foods, why are they eating unhealthy foods?

In his catalyst speech, Dr Siale 'Akau'ola posed open-ended questions about the reasons why many Tongans were choosing to eat unhealthy imported foods over locally grown and easily available healthy foods including fish. Dr 'Akau'ola asked why it was that so many were eating daily meals of canned corned beef and sausages, or why women were buying milk to feed their babies instead of breastfeeding.

The tastiness and convenience of imported foods are two factors that are often overlooked/underestimated in searching for resolutions to Tonga's NCD crisis. Tastiness and convenience are among the most common responses given by consumers on their food choices in Tonga. Canned corned beef is one of the most popular meat imports despite the availability of more affordable and healthier local fish. Many consumers buy bread or instant noodles because of its convenience compared to root crops like cassava that have to be skinned and cooked. Stress relief and addiction are common feedback given by Tongans rationalising their smoking/excessive drinking habits.

Value chain development may enhance accessibility to nutritious foods and improve farmers' livelihoods, but development also needs to be geared towards improving convenience and enhancing taste to address consumer preferences that make imported foods so popular.



### 3. Promote nutritious and healthy foods

Awareness programmes using all mediums are a vital part of value chain development because they can promote the consumption of healthier, more nutritious food options. The more health conscious people are, the greater the demand for local healthy produce. Initiatives like the Mai e Nima campaign and ‘The first 1,000 days’ are crucial to getting the Tongan population to be conscious about what they eat. Actively promoting the benefits of eating nutritious local food encourages the population to eat healthy, which in turn increases the consumption of locally grown foods and fish sourced from the seas and reduces the eating of imports that pose a risk to human health. In his catalyst speech, Dr ‘Akau’ola spoke about advertisements that were pushing mothers to buy milk substitutes. Advertisements promoting healthy foods can have a similar affect.

An example of an awareness programme is the new reality TV food show called the ‘The Pacific Islands Food Revolution’, which has been broadcast across Pacific Island countries as of May 2019. The show features a cooking competition between 24 talented cooks from Fiji, Samoa, Tonga, and Vanuatu. Under the scrutiny of celebrity chef Robert Oliver the contestants must prepare healthy Pacific Island cuisine.

### 4. Involve restaurants and bakeries in the value chain development of healthy foods

The takeaway food industry is a lucrative market in Tonga and one of the few business sectors dominated by native Tongans. Takeaway outlets are an important source of revenue for many fishermen and smallholder farmers who supply raw produce. Local bakeries that supply bread/dough, and butcheries that supply meat are also of strategic importance to farmers. This retail industry is a major employment provider and offers job opportunities to many young Tongans. It also attracts and produces skilled labour in the form of chefs, stock takers and managers. All entrepreneurs in Tongan food outlets have worked extremely hard to build up their businesses.

Ultimately, however, most takeaway foods, such as barbecued mutton flaps, deep-fried chicken, deep-fried fish and chips, pizza and lu pulu (palusami filled with spam/canned corned beef) if consumed too often and in large amounts increase the risks of NCDs and the crisis in Tonga. The frequent consumption of these foods has resulted in policies such as import taxes or health awareness programmes to reduce consumption of some takeaway foods. At the same time, the industry also facilitates accessibility to healthy foods by making it convenient, for example, cooked cassava and taro (often served with BBQs), boiled taro leaves and raw filleted fish. Government policies must balance the interest of all to the benefit of the whole society.

Food outlets (restaurants, takeaway outlets, bakeries, butcheries) are key contributors to Tonga’s economy and are a vital source of income for many local farmers/fishermen. This fact makes them essential actors in the value chain development of nutritious foods. Consulting food entrepreneurs and involving them in discussions on how to address Tonga’s NCD crisis can result in more practical solutions and contribute to the development of more effective and inclusive national policies. National policies are more likely to be successful if they are inclusive of all stakeholders by raising their awareness of the NCD crisis and instilling commitments in entrepreneurs to help reduce Tonga’s NCD rates through healthier eating.

Below are a few examples of policies and initiatives that are in line with business growth and better health:

- Most takeaways in Tonga serve their meals with root crops, such as boiled cassava, taro or kumara chips. A number of food outlets have removed mutton and French fries from their menus.
- MAFFF (funded by FAO) imported 100 goats and 50 sheep from Fiji in November 2018. The initiative seeks to boost local livestock so that food outlets will have choices between buying local lean meat and imported mutton flaps.
- Many restaurants and cafes offer chilled coconuts and homemade fruit juice as an alternative to soft drinks.
- Tonga's biggest bakery (Cowley's Bakery) is cooperating with MORDI Tonga Trust in a project that seeks to substitute imported bread flour with locally made breadfruit/cassava flour.
- Most restaurants serve vegetarian meals and some takeaways combine all of their meals with salads.
- One popular sandwich outlet, Yummie Treats, uses wholemeal and brown breads.





# Annex 1: Interviews – What did you learn?

## **Aloema Fretton, METI, Samoa**

### **Q: What did you learn from this trip?**

**A:** For me, the best learning experience is the importance of having linkages between the private sector, NGOs, farmers and the community. I'm going to take back the ideas that I picked up from observing the community working together with the private sector and NGOs. It's a really good example for us because, in Samoa, NGOs and the private sector are not connected. Some of Samoa's private sector can't supply on their own and so they need farmers. The big question is how are we going to connect these two stakeholders – that's where the NGOs come in. I'm a member of an NGO in Samoa, so I'm looking at how we can connect these two stakeholders so they can work together especially with the Government. It also aligns with what we are doing; that is promoting nutrition in the community. There are nutritious plants in Samoa that people are planting but they don't know that it's edible so what we are trying to do is to promote these nutrient-dense plants. For example, the drumsticks and the jackfruits, these are nutritious plants that we are promoting.

## **Lagi Fisher, Management Counsellors Association of Fiji, Fiji**

### **Q: What have you learnt from the trip?**

**A:** I've learnt that all of the different stakeholders in the value chain are important and they need to have collaboration, partnerships and clear goals to be able to see the end product. Often in the Pacific we tend to go and fetch or get the best prices for ourselves and, in most cases, it becomes unsustainable. Having a mutual understanding of each other's needs and expenses will help everyone to be successful. All the various actors have different issues and so having a clear understanding of the value chain network will help them to be successful and prolong their sustainability.

### **Q: What lessons stood out for you the most in the workshops?**

**A:** I guess what stood out the most for me is that the Pacific needs to make the jump with ICTs. It is very important for information to be available, otherwise decision-makers may end up on the wrong side of business. I think the Pacific needs to be able to move with the trend, accept that ICTs are evolving instead of having this resistance to ICTs. We need to have a better awareness of ICTs and about how we can better utilise ICTs to our advantage.

## **Joanna Bourke, CocoNew, Tonga**

### **Q: What was your opinion on the Tonga National Plan?**

**A:** It's really encouraging to see people from government that are supportive but also wanting to drive the action plan. I like that the plan is inclusive not just of agriculture farmers but also of fishermen, who we didn't address directly in the plan.

### **Q: The overall objective is to reduce non-communicable diseases (NCDs.) Do you support this?**

**A:** Yes, but I also believe that, before we can even reduce NCDs, we have to make sure that our farmers are farming

to support not only their families but also the lives of their communities. If our communities see that we should be eating more local food then it will lead to a reduction in NCDs.

**Q: What are your thoughts on Tonga’s agriculture prospects for the future?**

**A:** From the learning journey, you would have seen that it is being driven mainly from the private sector and, even if we need more government assistance, the private sector is doing its share in making sure that we have a prospective future for agriculture because if we sit around and wait for our government, we might be sitting around for a long time. So it’s great that we have champions in the private sector who are actually leading the agriculture industry here in Tonga.

## **Karness Kusto, Marshall Islands Organic Farmers Association, Marshall Islands**

**Q: What have you learnt from this trip?**

**A:** This trip helped me identify regional plans that are useful for all of us. In order for us to have a nice, fair, clear understanding of our own national plans, we have to have a good regional plan so that they can complement each other.

**Q: How different is the land in the Marshall Islands compared to Tonga and what advice could you give to Tonga?**


**A:** In Tonga, you have clay soil whereas in Marshall Islands we have sandy soil. In the Marshall Islands when it rains, the rain goes straight down the drain. In Tonga, the rain sits in the soil for a while and then moves down slowly. In Tonga, there is not enough farming activity but the land is really fertile. The soil is dry in Tonga so watermelon grows well and the fruit is really juicy because of the temperature of the dry soil. In the Marshall Islands, it’s very hard to grow because we are an atoll country. What we do in the Marshall Islands is that we have to use a lot of compost in order for the plants to grow. What I would like to suggest for Tongan farmers is to increase farming activity.

## **Kyle Stice, Pacific Islands Farmer Organisation Network, Fiji**

**Q: What have you learnt from this trip?**

**A:** The CTA learning journey has provided an opportunity for us to see what different agriculture businesses are doing, to see how they are partnering with farmers and government to be able to create more opportunities. One thing I learned is that we have this particular focus on nutrition-sensitive value chains and that allows us to carefully look at those who are producing crops that are healthy, that have nutritional advantage compared to the imported staples which really don’t have that much in terms of nutrition.

I learned just how important and difficult it is to really achieve collaboration among all the stakeholders at a national level and even harder at the regional level so I guess these are forums where we can make networks where we can meet each other, and make small steps towards some of the huge goals that we have. I think one of the things that I’ve really observed on this learning journey is that, particularly for export value chains, there are lots of people involved and each of them has an important role to play. I want to encourage farmers, processors, exporters, and policymakers to really take time to understand each other, to understand what each person’s role is, what they contribute, what their risks are. There’s still a misconception that there are people getting rich at the expense of another actor, but what we’ve seen, and it’s been validated by some of the value chain analysis we’ve done, is that



really nobody is getting rich but everybody contributes something and they get a return for the services that they provide. And I think the more that we can share that type of learning, it's going to strengthen relationships so this overarching theme of a value chain is seeing each other as part of a team and not competing against each other, and that can only come about when you have a better understanding of each other, and what they do and what the costs are and what the risks are.

## **Mark Johnson, Solomon Islands Rural Development Project, Solomon Islands**

### **Q: What have you learnt from this trip?**

**A:** I think the main thing is the benefits of what good entrepreneurs can do for the value chain. Helping the farmers, managing and supporting them, getting the produce that they need. They need good coordination to ensure the quality of produce sold and bought is achieved. It was good to see the Ministry's facilities in Tonga where the lesser advantaged groups can come and do their own packaging and fulfil their export requirements whereas in the Solomon Islands there currently are no facilities at all.

### **Q: How useful has this trip been for you?**

**A:** It's one of the better workshops because it's been out in the field and looking at things actually happening and discussing them in the field rather than the conventional workshop where you are in a room and you just talk about it and don't really see it. CTA has a really good mix of delegates from farmers, producers, exporters, business people, so I think it's a good combination for interaction.

## **Ateca Kama, National Food and Nutrition Council, Fiji**

### **Q: What did you learn from this trip?**

**A:** I have learnt a lot, especially in terms of digitalisation. I come from the Ministry of Health (Fiji) and one of our targets is to get our colleagues involved in digital health. So this forum has assisted with that goal. Aside from that, some of the lessons we learned in the field trips I can actually take back because my ministry works closely with the stakeholders in agriculture.

### **Q: Describe the innovation you presented in the competition.**

**A:** The food list (the innovation) is based on the South Pacific composition table and all countries in the South Pacific use that table. We're working with the USP Centre for Flexible Learning because they have industrial engineers and computer experts; we come in with the food and nutrition security expertise. It makes the system not only available for us in Fiji because the USP has institutions in 22 countries so it would be very easy for them to network across these countries.

## **Hika Gonne, Malaita Youth in Business Association, Solomon Islands (AgriHack winner)**

### **Q: What have you learnt from this trip?**

**A:** There are two things that I will take back with me: food security and partnerships. Climate change is threatening our food security so we have to adapt to the effects of climate change. We should have more partnerships especially



for young people – there should be a platform for us in the Pacific. I know there is a global one but we should have our own in the Pacific so we can share our own common challenges and one of the biggest ones is climate change.

## **Watson Anikwai, Malaita Youth in Business Association, Solomon Islands (AgriHack Winner)**

### **Q: What did you learn from this trip?**

**A:** In the past few days, we listened to a lot of keynote speakers and I've come to realise that agriculture plays a very big part in our economy and that some of our practices are inefficient. That's where ICTs comes in because it can make these processes more efficient. I've learnt about the big problem of NCDs and how agriculture can help tackle this. In the Solomon Islands, we also import a lot like Tonga. Coming here to learn about value chains and agriculture, I can go back and implement something that will really help our country and do something that can change lives.

## **Rinesh Sharma, AeroHerb, Fiji**

### **Q: What did you learn from this trip?**

**A:** This trip gave me the opportunity to meet others who share the same vision as well as the drive to make it a reality. It was an honour being here and this platform really makes us connect because we, as the Pacific, can unite and be one and overcome all the problems that we have today.

## **Jiu Daunivalu, Fiji Crop and Livestock Council, Fiji**

### **Q: What did you learn from this trip?**

**A:** Most of the time we are in Fiji, but when we get out and see other countries, we can analyse the differences. There are lessons to be learned. For me, as a Fijian, it's the first time to see Pacific Islands harvesting potatoes so successfully and to know they are being grown in Tonga.

## **Kanaan Ngutu, Profound Enterprises, Kiribati**

### **Q: What did you learn from this trip?**

**A:** The most important thing I learned from this trip is the need to understand the business concept and think as an entrepreneur. We came here as IT persons to propose the solution that we believed will solve the problem, without knowledge of the business side but hoping that at the end of the day, we will create a platform that will turn into a successful business. We had no business information about our ICT 'app' and that is what I learned the most. I was able to integrate the business concepts into my ICT solution to make it more feasible to attract investments and sustainable as well.

This workshop is very valuable because I believe that after this workshop, maybe next year, we will develop at least one or three ICT applications that will solve a problem. They will not only be valuable for one Pacific Island but for all. Whatever solutions can be applied in Kiribati, I can take to other Pacific Island countries. The expectation is that ideas are turned into Pacific-wide ICT solutions that benefit the sector.



## **Kenneth Katafono, TraSeable Solutions, Fiji (AgriHack winner)**

### **Q: What did you learn from AgriHack?**

**A:** I'm a fisheries person so I learnt a lot about how agriculture really works which is one of the reasons I came to this event. The whole purpose of this trip was to understand what agriculture (other than fisheries) is all about and what the challenges are. We don't often have workshops like this, so it's a great opportunity, especially for the youth and innovators.

### **Q: What was your presentation?**

**A:** I presented on TraSeable Farms, it's something that we're looking into. We've been exploring agriculture issues for the last 4 or 5 months because we see that there are similar challenges to that in Pacific Island fisheries. Fisheries and agriculture are our biggest resources; as Pacific Islanders we should take ownership of this and we should try and find solutions for ourselves.

## **Kiran Sashi, FRIEND, Fiji**

### **Q: What did you learn from this trip?**

**A:** It's been really interesting to connect with a whole range of other Pacific Islanders going through the same struggles. One of the things that stayed with me is that we, as the Pacific, need to be able to support each other. We can't keep expecting administrative organisations to get us together. As a civil society, if we can share our experiences, our learning, our markets, our branding and packaging, we'll move faster in getting out of poverty. The world wants good stuff that the Pacific has, so a question that strikes me is: 'How do we connect to these markets?'

### **Q: What can Tonga and Fiji learn from each other?**

**A:** I think Tongans are doing really well in agriculture. Tonga still has a wide variety of local indigenous crops. For us, we are doing more integration and trying to grow more of our traditional crops because they are high in fibre and rich in micro-nutrients. If we want to beat obesity and diabetes which is a problem for both our countries, I think citizens' action have to be involved in the exercise; being able to eat healthy in big functions, family functions, we have to want to go back to our traditional foods.

## **Obed Tui Matariki, Timakata & Associates, Vanuatu**

### **Q: What are your feelings about these workshops?**

**A:** We are very grateful to CTA, IFAD and the other partners for bringing us over. It's an awesome opportunity to network and share knowledge with other farmers and small- and medium-enterprises and to see first-hand what they're doing. This cross-learning journey gives you a comprehensive scope of, I guess, the whole value chain from the farm to the packhouses, to inspect the export facility and how it is done, which is what we are looking to do for Vanuatu. Having seen this whole value chain, it's very useful for us.

### **Q: Is there advice that you can give to those involved in Tonga agriculture from Vanuatu?**

**A:** I think we are more inspired by the hard work of the farmers here in Tonga. The Women in Agriculture group that we saw, and the other groups, inspire me as well. The things we learnt from this journey are encouraging all of us to do more for our communities back home.





# Annex 2: Case studies/ Success Stories

## 2.1 Changing attitudes of women in farming and ICTs

In Tonga, farming is the traditional role of men and it is culturally considered to be unladylike for women to participate in the growing and cultivating of crops. Furthermore, Tongan land laws prohibit women from owning land (with the exception of the Tongan Royal Family), observing traditional protocols that land can only be inherited through the male line.

Despite these prevailing attitudes and cultural constraints, there is a growing trend of Tongan women participating in the sector, with a number of female farming enthusiasts pursuing their passions and finding success in the industry.

One excellent example of this is the group ‘Women in Agriculture’ founded by three retired women, Tu’inukuafe, Salote Fukofuka and Luseane Taufa, who operate plantations of papaya and yams, which they have successfully commercialised for both export and the domestic market. They also grow and sell tropical flowers to hotels, and plan to change their name to ‘Women in Horticulture and Tourism’ because of their growing market in the tourism industry.

A husband of one of the members owns the allotments operated by the group, so they don’t have to pay any rent or lease. This is complemented by the fact that landowners in Tonga are not required to pay rates.

The women not only manage their plantations but also actively participate in the cultivating and processing of their crops, and one of the women, Mele Tu’inukuafe, spoke about the stares she ignored while working out in the fields.

“I feel embarrassed when people drive past and they look at me, they’re probably thinking ‘What is this woman doing here?’”.

The trio say that they have been unable to secure financial aid from the Government.

“Nobody wants to help us...perhaps there are too many people asking the government for funds”, said Salote Fukofuka.

Their hope is to secure funds to irrigate their plantations and they spoke about their ambitions to expand their business into growing paper mulberry trees to make traditional Tongan mats (Ngatu), a commodity highly valued in Tonga.

## Women and information communication technology (ICT)

A major factor in the accomplishment of successful females in male dominated sectors is the support received from male colleagues, fathers and husbands.

Selu Kauvaka, a network engineer for Tonga's Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications, delivered a catalyst speech at the opening ceremony for the integrated Innov4AgPacific project event 'Transforming Nutrition-Sensitive Value Chain Development in the Pacific Islands'. She asserted that it was the men who inspired her to pursue her career choice.

"Some of the problems we face are daily discrimination and a lack of confidence. Growing up, I was told by my grandmother that engineering is not for women, so that kind of pushed me back from wanting to be an engineer. My father was my inspiration, he was an engineer, and he told me, "You can do it" along the line, men and women work hand-in-hand. All my bosses throughout my life have been men, they have been my inspiration; they have pushed me to where I am today."

According to Selu Kauvaka, women make up only 2% of ICT government employees in Tonga, whilst women make up only 7% in agriculture. She spoke about efforts to try and close this gap.

"In Tonga, we have a newly established group called 'Women in ICT in Tonga' and in short we are called 'The Coconets'. This group was established in March 2018, and we've been going to schools and talking to girls, and encouraging them to take ICT vocational studies. Every day, we try to inspire women to take up a career in ICT to help development in Tonga and the Pacific."

## 2.2 Finding solutions to Tonga's NCD crisis


The battle against NCDs in the Pacific region was underlined by Tonga's CEO of Health, Dr Siale 'Akau'ola, in a catalyst speech delivered at the opening ceremony of the Innov4AgPacific project event 'Transforming Nutrition-Sensitive Value Chain Development in the Pacific Islands'. 'Akau'ola has been at the frontline of the NCD crisis in Tonga, a country whose people are ranked among the most obese and diabetic in the world.

"NCDs cause four of the five most common causes of deaths in Tonga", 'Akau'ola said during his speech.

"The biggest resources that we have in the Pacific are our human resources but they are dying early. They are dying at the peak of their productivity, so we are not getting a lot of productivity out of our biggest resource – which is our people. Clearly this is a big issue for all of us."

### Socio-economic and environmental determinants of health

According to Dr 'Akau'ola, the extent of NCDs is influenced by a variety of factors known as the 'socio-economic and environmental determinants of health'.



“You’ve got to think about education, trade, food, the price of foods, the marketing of foods, advertisements, policies and legislation. These are the things that determine NCDs. These are the things that we have to think about.”

“What do people do to get NCDs? Do they know what they are eating? Do they have the capacity to buy things that are healthy and nutritious? Are these things available? Do foods have to be imported? Is there any cultural thing that is forcing them to eat all this unhealthy stuff?” he asked.

“We have to question ourselves: ‘Why are people eating corned meat and sausages?’ I mean you can eat it once a month, but not every day. We see a lot of advertisements for milk substitutes, why do we have to buy this stuff when we have a healthy mother? Do we have any legislation in place to protect the population? Do we have policies that are non-helpful?”

### **‘Health in all policies’**

Understanding how policies affect the health of the population was something that needed to be considered, stressed Dr ‘Akau’ola. He also pointed out that it was important for Pacific countries to study the successes of other countries in dealing with NCDs.

“There is a famous saying within the WHO called ‘Health in all policies’. Whenever you start to talk about growing crops – you must think about the impacts on health; whenever you devise regulations to be enforced on the population, you must think about the impacts on health; whenever you draft a curriculum for children, you must think about the impacts on health.”

“The Scandinavian countries have managed to reduce the number of people suffering from heart disease and people who are smoking. New Zealand is a very good example, they have managed to reduce the number of people smoking and have improved dieting. For us in the Pacific, we need to learn from these countries,” said Dr ‘Akau’ola.


“Digitalisation of health is ongoing in Tonga. We need to get data that is representative of what is going on in the community. We want to measure the impacts of NCDs, how educated people are about health. Are they actually losing weight, are they getting healthier? With digitalisation, we can have access to this information much faster.”

### **The First 1,000 Days**

Dr ‘Akau’ola outlined a national health strategy in Tonga called ‘The First 1,000 Days’ – implemented to tackle NCDs.

“Under the First One Thousand Days, we look at mothers, babies, early childhood education, things that will converge to make the earliest healthiest start of life for any infant, as well as health of the mother who is raising the child.”

“Then we focus on children, youth and adults who suffer from NCDs or who are in danger of getting NCDs. The basic risk areas are smoking tobacco, lack of physical exercise, unhealthy eating and alcohol. These are the four biggest causes of NCDs.”



Dr ‘Akau’ola described how taxes on imported unhealthy goods inadvertently prompted the local production of unhealthy goods. He pointed to poverty as a factor that needs to be addressed. “In Tonga, we are trying to legislate taxes on tobacco and the importation of unhealthy foods, especially the sugary sweetened beverages.”

“We are seeing a reduction in smoking and a slight reduction in drinking of unhealthy beverages. There are issues of concern because we are seeing people focusing on the local tobacco. Naturally, that’s what people do when they’re taxed on one thing, they look at another. It’s important to start thinking about these things. ‘Why are people growing these things?’ Clearly they’re running some kind of business. Maybe it’s something we should be thinking of: ‘What are we going to promote? What are we going to encourage people to grow to get out poverty? Something that is healthy and that’s not going to kill them in the end.’”

## 2.3 The versatility of exporting in Tonga

Nishi Trading Co Ltd. is Tonga’s leading agricultural exporter. The company primarily exports butternut squash to China and Japan but also processes maize, potatoes, red onion, and watermelons products for both export and import substitution.

The managing director of Nishi Trading, Minoru Nishi, says that his company acquires much of its produce from smallholder farmers, especially watermelons.

“A lot of training is done here for the smallholder farmers that supply the rest of the quota for export,” said Minoru. “We invest a lot in training smallholder farmers so that they can produce export grade quality vegetables.”

An impressive feature of Nishi Trading is its modernised packhouses and processing facilities located at Umusi in central Tongatapu. These facilities include a blast freezer, conveyor belts, industrial fans, storage sheds, and pest control equipment, including specialised fly screens that meet the biosecurity requirements of overseas markets. The company meticulously records all of its crates of goods, helping it to meet export standards.

“We have it computerised from the point of receipt, so you can’t mix bins up. Everything is traced back to the farm using labels made with a computerised system and printers,” said Minoru. “Each has a barcode, which records the grower, the village where the crop grows and the variety. We keep a crop diary that we monitor, what they’re doing on the farms that complies with the packhouse and markets.”

Minoru emphasised the benefits of consulting research labs in order to resolve any issues with the quality and health of agriculture. “It’s important to have research and a proper lab to support our work. A while ago, we had problems with our citrus trees. For about six months, the trees didn’t grow. In the early months, we saw holes in the trees and initially we thought it was an insect attack, but we couldn’t figure it out. We did an analysis and discovered that there was a calcium deficiency. To fix this problem, we applied a half-kilo of lime to each tree. The professor we consulted told us that he had never seen anything like it.”



## Community support

Minoru is widely lauded as a champion entrepreneur in Tonga because of his company's active role in the community. He runs the 'Nishi Trading Foundation', a charity that upskills Tongan farmers, and contributes to the 'Mai e Nima' project – a nationwide awareness campaign to change unhealthy eating habits in Tonga, a country with one of the highest diabetes and obesity rates in the world.

Another community project that Nishi Trading is heavily engaged in is the 3-year 'fruit tree citrus project', which aims to raise the health of the population by getting Tongans to grow nutritious agriculture.

“The aim is for every Tongan household to have a citrus tree in their backyard...local and fresh food is healthier according to science. There's a lot of seasonal workers that go to Australia and New Zealand, we want to utilise their expertise to teach others how to grow citrus in their homes.”

## Overcoming challenges

Minoru outlined some of the past and current challenges that his company faced, indicating the amount of perseverance required to run a company in Tonga, as well as the importance of sustainability in the face of competition and climate change.

“Last year we exported up to 400 t of watermelons, this year we've only done 77 t — so it's a huge drop. The industry was hit hard from Cyclone Gita, as well as from a drought. There were psychological and social impacts from these events and it was quite stressful for everyone – that's the impacts of climate change.”

“In 1988, the squash industry was new to Tonga, it was a quick 3-month cash crop. Many people got into it and we self-destructed as an industry. Before we had 32 exporters, today we have four. It just goes to show how important it is to focus on sustainability. In 1999, we set up a company in order to export our own squash to Japan. Several times we lost a lot of money and we almost went bankrupt twice.” He continued, “This is our second year of export to China. We diversified into China because of the volatility of markets in Japan and Korea.”

## 2.4 Pacific Sunrise Fishing

Pacific Sunrise Fishing is one of only two Tongan-owned tuna fishing companies, founded by Eddie and Rosemarie Palu. It has operated in Tonga for more than 13 years and is equipped with its own modern packing and refrigeration facilities, meeting the standards expected from its markets. The company employs 75 staff and, with six long liner-fishing boats, exports tuna to five countries.

“Our main target market is Japan, but we also send tuna to Auckland, Los Angeles, and Sydney. They take all the fish we have, it's a well sought-after commodity,” said Rosemarie. “We've got six tuna long-liner vessels. They all fish in the Tongan EEZ, that's about 200 nautical miles around each island; there's over 170 islands in Tonga.”



Rosemarie, an Australian, met her husband Eddie in Tasmania, where he studied Marine Biology. Before establishing Pacific Sunrise Fishing in Tonga, the couple did cray-fishing in Tasmania and tuna/long-lining in Queensland.

Pacific Sunrise Fishing catches 13 types of fish and Yellow Fin Blue Eye tuna is the main export, although the company also exports Makemake. According to Rosemarie, Tongan tuna appeals to markets demanding fresh fish. The short fishing trips in Tongan waters enable them to meet these demands. “We have relatively short trips. In Australia it’s 2-3 weeks, in Tonga it’s 6-9 days. Our markets appreciate the fact that our fish hasn’t been out of the water for too long. I think more people today are interested about the story of their fish, where it comes from and how it was fished.”

Rosemarie said that one of her company’s biggest challenges was transporting fish for export. “A major constraint for Tonga is getting fish out of the country because we only get two wide-bodied planes a week and our fish has to go on a wide-body plane. We fish to the flight schedule, if the flights change, our fishing changes because we need to get it out quickly. Everything needs to be certified by the fisheries department and department of health, and be at the airport 4 hours before take-off. Our catch has to be weighed and measured by the fisheries department.”


Pacific Sunrise Fishing also sells fish domestically through its own retail outlet and supplies fish to 65 restaurants. Unlike many countries, Tongan consumers prefer to buy unfileted and unscaled fish. This characteristic saves wastage costs for fishing companies. “One advantage of fishing in Tonga is that there is not much wastage. Tongans like buying the whole fish. Fish heads are very popular in Tonga. Pig farmers take the unwanted bits of our exports and feed it to their pigs.”

With an ocean territory covering over 700,000 km<sup>2</sup>, fish is perhaps Tonga’s largest resource and potentially its most lucrative export. In 2014, the end value of Pacific tuna surpassed over €22 billion (according to The Pew Charitable Trusts). Despite this, Tonga possesses only two tuna fishing companies and most of Tonga’s tuna is caught by foreign fishing vessels.

Pacific Sunrise Fishing had a five-year Tuna Management Plan. But when the National Reserve Bank of Tonga announced that the Foreign Exchange Control Act became effective on 1 November 2018, Eddie Palu considered the decision “a kick in the butt.” In January 2019, Eddie and Rosemarie Palu announced that their company was downscaling and selling-off its assets in response to Tonga’s new Foreign Exchange Control Act, which has created too many uncertainties for exporters and local businesses. There were already foreign interests waiting to buy the company’s fishing boats.

## 2.5 ICT potential in Tonga

Digicel Tonga Chief Executive Officer, Francis Thomsen, and Chief Judge of the Finals of the Pacific Agri-Hack held at the USP Tonga campus, stated that mobile companies served as catalysts for people to improve their lives by giving them accessibility to the internet and ICT platforms. He cited how Digicel has helped Samoans recover from a tropical cyclone in 2012 through mobile remittance. “One of the things that we did in Samoa was mobile



remittance. Natural disasters are very common in Pacific Islands and the speed to recovery is very important. Digicel was able to work with the Central Bank of Samoa and the agriculture ministry to create a platform using mobile money that allowed Samoan farmers and fishermen to be able to get what they needed on the spot and start rebuilding.” He continued, “Digicel is a catalyst, tech companies are catalysts, we are enablers, we give you access to preselling your products, access to information on what’s impacting your crop, on how much you need to buy to get a reward, or on how to reduce costs in your value chain and monetise it.”

The benefits of ICT platforms were echoed by Sione Veikoso, technical head of Tonga Telecommunications Corporation (TCC). “E-agriculture enables farmers to gain access to a wider range of overseas markets,” said Veikoso as he outlined various ICT avenues. “ICT allows farmers to access updated market info on prices for commodities and empowers them to negotiate better on prices. Mobile banking offers further scope to reduce costs and stimulate global trade, so ICT plays a major role in financial security. The list goes on.”

Veikoso emphasised the power of ICTs to empower small isolated rural communities by connecting them to the national/international market. In Tonga, the term ‘isolated rural communities’ is commonly referred to as the isolated villages of the outer islands – small islands/communes far away from the main island of Tongatapu, where most of Tonga’s commerce is conducted. “ICT enables rural communities to interact with other stakeholders thus reducing rural isolation,” stated Veikoso. He added, “Global positioning systems linked to geographic information systems, digital cameras, the internet... all of these help islands and rural communities to document and communicate their situation from afar. ICTs enable islands and rural communities in Tonga to have access to credit and rural banking facilities.”

Thomsen proposed the idea of facilitating Tongan farmers by subsidising access to smartphones. “With friends that can subsidise, we can enable every farmer in Tonga to have access to a smartphone device. They can check on weather; they can share info with their colleagues, seek expert advice on how to get info to treat diseases. These types of devices can support the whole process.”

The vital role of ICT infrastructure in upholding the digital economy was emphasised by Veikoso. “The digital economy has three pillars – one is e-business, two is e-commerce and the third one is ICT infrastructure. These pillars depend on each other. If you pull out ICT infrastructure then e-business and e-commerce will collapse, and there will be no digital economy.”

## 2.6 MORDI Tonga Trust

MORDI Tonga Trust is one of the youngest NGOs in Tonga. Established as an independent NGO in 2009, MORDI Tonga has grown rapidly from working with 29 communities to 120. The NGO originally focused its work with communities in the outer islands of Tonga, but expanded its reach to the main island of Tongatapu in December 2017 and established its office there. The NGO implements rural development programmes and partners with other agencies and private enterprises to facilitate value chain development and improve the economic outcomes of Tonga’s agriculture industry for the benefit of all of its stakeholders.



CEO of MORDI TT, Soane Patolo, explained that one of the biggest problems of the sector was a communication breakdown between stakeholders. “We see a breakdown in the last 10 years. Farmers sometimes accuse the private sector of ripping them off. Private does the same with farmers. Everybody points at the government saying that they are the bad guys.”

“We have to prevent a breakdown in the value chain. Our goal is to help everyone involved in the value chain to have the same understanding, building relationships first before moving forward. People don’t understand the whole value chain. Some farmers ask us why we involve the private sector because they believe they are getting ripped-off. We explain the value chain to them, the costs of sustaining a business.”

According to MORDI TT, there has been a decline in the agriculture’s share of GDP despite a slow increase in agricultural exports (pre-Cyclone Gita). It attributes this problem to the fact that the value of agriculture exports is very small compared to the total value of agriculture production. To help address this issue, MORDI TT is driving a major project called the ‘Tonga Rural Innovation Project’ (TRIP). The stated objective of TRIP is to contribute to improved and resilient livelihoods for Tonga’s rural population. “One component is to do community development which is mostly infrastructure and community planning,” said Patolo. “We will train and help smallholder farmers develop not only their rural allotments but also their town allotments, and assist their women in making handicrafts.”

Another challenge that MORDI TT is looking to help address is Tonga’s massive trade deficit, which grew from \$270 million pa’anga in 2009/10 to \$393.5 million in 2014/15 (€106 million to €155 million). “We are looking at import substitution”, said Patolo. “We are working very closely with our local bakeries and, from the testing that we have done, we believe we can insert about 10% of breadfruit flour (gluten-free) to create bread. That will have a big impact on our trade deficit.”

Patolo continued to stress the importance of relationships and that it was vital for stakeholders to understand each other’s contributions to the value chain, including the government which often brushed shoulders with stakeholders including MORDI TT. “We used to be like the others blaming the government, but we realised if we want the government to change we have to work with them. In a few years’ time, donor funding won’t be around all the time. We are trying to work closely with the government. We try to get them to participate with us in our events even when they don’t involve us in theirs.”

## About the project

The project “Leveraging the Development of Local Food Crops and Fisheries Value Chains for Improved Nutrition and Sustainable Food Systems in the Pacific Islands with a focus on Fiji, Kiribati, Marshall Islands, Samoa, Solomon Islands, Tonga, and Vanuatu” is co-funded by the International Fund for Agricultural Development (IFAD) and the Technical Centre for Agricultural and Rural Cooperation (CTA) and is implemented in partnership with the Pacific Islands Private Sector Organisation (PIPSO). The goal is to strengthen the capacity of the Pacific Island governments, farmer and private sector organisations, and sub-regional institutions to develop strategies and programs – as well as mobilise financing – that can increase poor rural people’s access to nutritious and healthy food. CTA has overall responsibility for the implementation of the project.

## About the partners



### IFAD

The International Fund for Agricultural Development (IFAD), a specialised agency of the United Nations, was established as an international financial institution in 1977 as one of the major outcomes of the 1974 World Food Conference.



### PIPSO

The Pacific Islands Private Sector Organization (PIPSO) is the premier private sector representative body in the Pacific Islands region. It was set-up through the mandate of the Forum Economic Ministers in 2005, and legally established in 2007, to be the representative body of the Pacific region’s private sector. In doing so, it focuses its work on 4 key areas: Supporting National Private Sector Organizations (NPSOs) to be strong and responsive organisations; Assisting Pacific businesses to enhance their business competitiveness and growth; Championing the interests of private sector in the appropriate fora; and Ensuring the sustainability of PIPSO’s resource and enhancing its capabilities.



### CTA

The Technical Centre for Agricultural and Rural Cooperation (CTA) is a joint international institution of the African, Caribbean and Pacific (ACP) Group of States and the European Union (EU). CTA operates under the framework of the Cotonou Agreement and is funded by the EU. For more information on CTA,





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