

The agriculture-nutrition-income nexus in Tonga

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In a nutshell

- Increasing reliance on imported foods, limited access to affordable nutritious local foods, and exposure to climate change and natural disasters are negatively impacting the health, well-being and livelihoods of Tongans.
- More than 50% of agricultural land is fallow. Oceanic and coastal fisheries resources are being depleted. The private sector is reluctant to increase investments in food processing facilities.
- 99% of the population is at high or moderate risk of developing non-communicable diseases (NCDs); obesity, cardio-vascular disease, diabetes and hypertension are prevalent.
- Limited coordination exists among the various agencies implementing policies and programmes that address the agriculture, food and nutrition challenges.

The Kingdom of Tonga consists of over 170 coral and volcanic islands; 36 are populated. The total population is about 100,700 and 70% of people live on the main island, Tongatapu, which is the main centre of national activities. Agriculture accounts for 18% of total Gross Domestic Product (GDP) and 90% of exports. Approximately 85% of all households rely on

Key recommendations

- Strengthen the multi-agency and multi-stakeholder coordination mechanism and consolidate implementation, monitoring and evaluation of agriculture and health programmes to enhance governance and performance of the agri-food system.
- Use available land more effectively and enhance management of marine and coastal fisheries resources, including expansion of Special Management Areas (SMAs) to increase availability, accessibility and consumption of local nutrient-dense food crops and fish.
- Intensify nutrition education and communication campaigns that promote dietary diversity, the nutritional value of local foods and healthy eating and lifestyles, with a special focus on schools and communities, especially in rural areas/outer islands.
- Upgrade the capacity of the Food Division of the Ministry of Agriculture, Food and Fisheries to ensure locally produced and imported foods comply with quality and food safety standards and regulations.
- Reduce the barriers that restrict access to finance, insurance and ICT products and services for farmers/fishers and the local business community.



subsistence agriculture (including forestry and fisheries) for food and income but only about 5% of farms are commercial, and 22.1% of the population live below the poverty line.

Tonga is highly vulnerable to climate change and ranked the second most at-risk country in the world to natural disasters. Sea level is projected to rise within the range of 3-17 cm by 2030. In recent years, droughts and cyclones have negatively impacted agricultural performance and rural livelihoods. Oceanic and coastal fisheries resources are seriously depleted and a high reliance on imported foods and fluctuations in global commodity prices make the food and nutrition situation worse.

Agriculture and fisheries

Agriculture is a major economic activity and source of livelihood in Tonga. Of the approximately 26,790 ha of arable land, 51% lies fallow. The average size of agricultural holdings (town and 'bush' allotments) per family is 3.2 ha, and they are used primarily for crop production and raising small livestock (poultry and pigs) for home consumption and sale. Of the 14,000 agriculturally active households identified in the 2015 agricultural census, 37% and 62% were engaged in subsistence and semi-subsistence agriculture respectively. There has been a significant reduction in commercial farming from about 24% (2001

census) to 5% in 2015, and the high cost of imported livestock feed limits growth in commercial livestock production.

Fish, primarily tuna (mainly albacore, bigeye and yellow fin) and inshore species (e.g. giant clams and lobsters), represent one of Tonga's most lucrative natural resources. However, there has been a significant reduction in fishing activities, primarily due to depletion of stock levels as a result of over and illegal, unreported and unregulated fishing and some government fiscal policies which have hindered private sector investments. The Ministry of Fisheries has introduced the Fisheries Management Act and Regulations of 2002 and established SMAs, which serve to control fishing activities, monitor the marine ecosystem and restore stock levels. Foreign and local long-line fishing vessels are required to register and pay an annual license fee to fish in Tongan waters. Conservation, management, sustainable utilisation and development of oceanic and coastal fisheries and attracting more investments in the sector are national priorities for ensuring optimum economic benefits are derived, whilst encouraging local ownership of resources.

Agricultural exports account for about 90% of total exports. Root crops, squash, coconuts, and fish (tuna) are the primary export commodities; fruits and vegetables, kava and vanilla are also exported but to a lesser extent. Frequent exposure to natural



disasters negatively affects production and export trade as well as food prices on the local market. After recording an increase between 2010 and 2014, Tongan agricultural exports have since declined in volume and value. A 6-month El Niño-related drought in 2014 resulted in a 50% reduction in exports of squash and root crops. Cyclone Gita in 2018 also had a devastating effect, for example, NISHI Trading, one of the biggest exporters in Tonga, recorded an 80% reduction in watermelon exports from 400 t in 2017 to 77 t in 2018. Prices of local foods, especially vegetables, also escalated during these periods.

Food

Food plays an important role in the social and cultural life of Tongans; it is an essential aspect of all traditional ceremonies including funerals. Over 51% of household expenditure is spent on food. Meat expenditure is the highest (30%), followed by vegetables (24%) and bread and cereals (over 14%). Notable differences in spending patterns have been observed between urban and rural households. Rural communities supplement food needs by as much as 29% from own home production as opposed to 19% by urban households. A high reliance on and consumption of imported foods – especially processed foods high in salt, sugar and fat – has made Tongans very vulnerable to global

commodity price shocks and has contributed to the rise in NCDs.

Between 2008 and 2014, the volume of beef imports tripled from 250 t to 805 t. The volume and value of cereal and fruits also rose substantially, e.g., for cereals, imports increased from 5,860 t in 2008 (Tongan pa'anga (TOP) 13.5 million/US\$ 5.65 million/□5.1m) to 15,900 t in 2012 (TOP 34 million/US\$ 14.25 million/□13 million).

Initiatives by the government, multiple agencies, churches, donors and development partners have been introduced over the years to increase access to fish, fruits, vegetables and other food crops and livestock, to promote healthy eating and diversify diets. They have had some measure of success. Vegetables are now recommended to be added in every recipe to provide healthy, affordable food for the whole family. Since 2004, the numbers of Tongans consuming the required five servings of fruit and vegetables per day has increased from 8% to 37%. School, community and home gardening, and nutrition and healthy cooking education programmes targeting women and school children have been particularly effective (Box 1). The Tonga Health Promotion Foundation (TongaHealth) and MORDI Tonga Trust provide seedlings to schools and women's groups and hold community-based training sessions on agriculture, health and nutrition.

Box 1. *Mai e Nima*: Promoting school gardens, good nutrition and healthy eating

The *Mai e Nima* (give me five) programme, a collaboration between the Nishi Foundation and TongaHealth, has been running since 2012 to improve the health and well-being of school children in Tonga. Through school gardening and healthy cooking competitions, the programme promotes the benefits of eating fruit and vegetables to establish life-long healthy eating habits from an early age.

Factors contributing to the successful implementation of the *Mai e Nima* programme include:

- Good collaboration, communication and planning between partners.
- The 'fun' element – the children enjoyed making healthy food choices for themselves.
- The influence of the Pacific Food Revolution TV series, which promoted adding value to local produce.
- Having a knowledgeable and enthusiastic local nutritionist who was familiar with all the produce.
- Involvement of the local farmers meant they became more motivated to provide healthy produce for the children.

The Innov4AgPacific Project provided seed funding to the Nishi Foundation to expand the number of schools participating in the *Mai e Nima* programme and its farmer field schools. The funding also enabled the production of a promotional campaign – 'Farm to Fork' – with the active participation of producers, communities and school children to emphasise the importance of developing local nutrient-dense food value chains.

The key messages of the campaign were:

"Our traditional and local fruit and root crops are delicious and healthy"

"It is easy to prepare dishes with our local produce"



Nutrition

In Tonga, 99% of the population is at moderate to high risk of developing NCDs. Rising levels of morbidity and lower life expectancy are linked to high incidences of cardio-vascular disease (responsible for 38% of all deaths), diabetes (15%), hypertension (27.6%) and obesity (>55%), and are among the greatest challenges to Tonga's national health system. The nutritional status, particularly of women and children, is associated with the level of family income and is likely to be worse in poorer households and single parent families. The under-five mortality rate is higher in poorer households. Improving access to affordable, nutrient-dense local foods and increasing dietary diversity at the household level to give Tongan children a healthy start in life is crucial. This will help to reduce obesity and manage the NCD crisis for improving health outcomes in the long-term.

The policy and institutional framework

The Ministry of Agriculture, Food and Forests (MAFF), the Ministry of Fisheries (MoF), the Ministry of Health (MoH) and the Ministry of Commerce, Trade and Industries (MCTI) play an active role in designing and implementing policies and programmes that impact on food and nutrition security in Tonga. In accordance with Tonga's 2014 Food Act, all responsibilities for the adequate provision of food that is safe for human consumption are vested with MAFF. Resource constraints (human and financial) have led to a deepened partnership between MAFF, MoH and MCTI in the conduct of food facility and product inspections and analysis to ensure compliance with food hygiene, safety and labelling regulations.

In 2007, MoH established TongaHealth as an independent body under the Health Promotion Foundation Act. TongaHealth works in partnership with other government ministries (MAFF, Education and Training, Internal Affairs, Finance and National Planning) as well as civil society including church leaders, the private sector and the police to implement the



2015-2020 National Strategy for Prevention and Control of NCDs. The National NCD Committee has responsibility for overseeing the implementation of the strategy. The Australian Government provides the majority of the funding with a focus on strengthening NCD management through health promotion and support for disability services, among other initiatives.

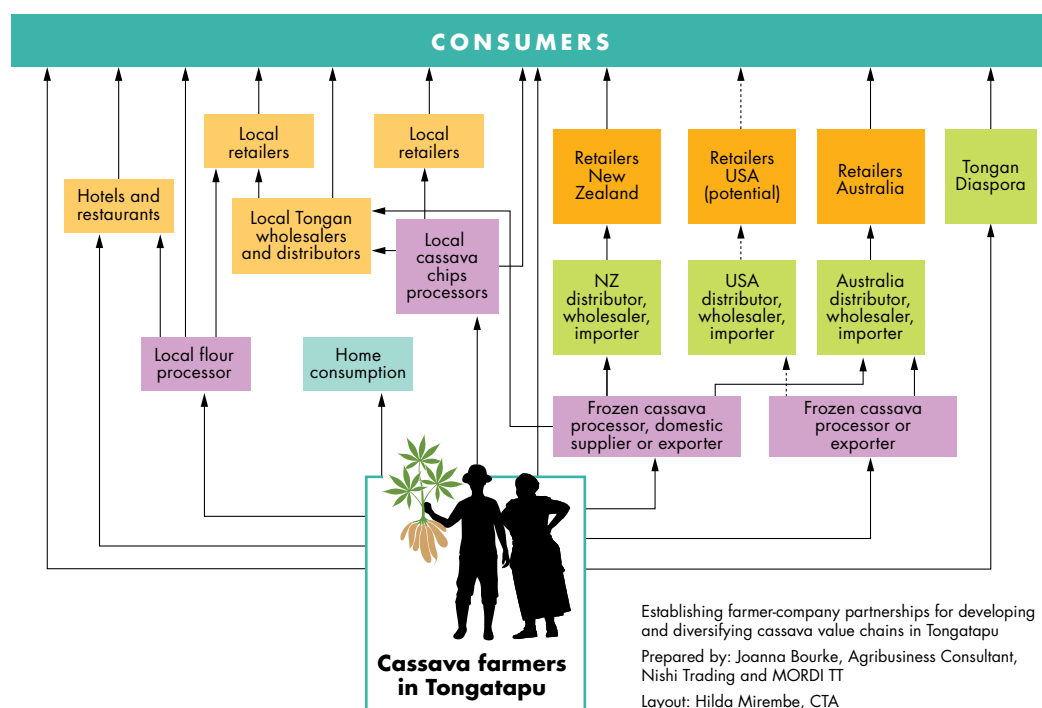
The Agriculture Sector Growth Committee (ASGC) and the Fisheries Sector Growth Committee (FSGC) have developed the Tonga Agricultural and Fisheries Sector Plans (2016-2020), with support from the World Bank, IFAD and UNDP. The four key components of the Tonga Agriculture Sector Plan 2016-2020 are climate-resilient agriculture, an enabling environment (governance, regulations and compliance), sustainable livelihoods and healthy foods, and sustainable economic growth and foreign exchange earnings. The key targets to be achieved by 2021 are 5% annual growth in rural incomes; 10% annual growth in vegetable exports; and 10% annual decline in meat imports. Farmer-inclusive value chain development should also be supported (Box 2).

The four main components of the Tonga Fisheries Sector Plan 2016-2020 are sustainable community fisheries, profitable commercial fisheries and aquaculture, public and private investment (infrastructural development), and enhanced governance and capacity building.

Box 2. Farmer-inclusive cassava value chain development in Tongatapu: Don't underestimate the manioke

Cassava is widely grown in the Kingdom of Tonga but despite its health and nutritional benefits and processing potential, is not widely valued nor promoted for improving nutrition and incomes. Producers mainly supply informal local markets and selected international markets such as Australia and New Zealand. Opportunities exist for improving market linkages at local, regional and international levels by organising cassava producers, by promoting its nutritional value and health benefits, and by expanding the range of value-added products (chips, frozen products, flour, starch) to increase market opportunities to maximise incomes. A farmer-inclusive value chain analysis was conducted in partnership with farmers in the Hihifo production zone in the western district of Tongatapu. This has proven useful in identifying gaps and opportunities for developing an investment case for more value-added products e.g. setting up a community-based mill to produce cassava flour for sale to local food outlets.

Kingdom of Tonga – Don't underestimate the Manioke Cassava Value Chain Map



The Tonga Development Bank (TDB) has initiated a credit facility with the support of the government. Farmers and fishers are able to access loans at low interest rates (1-4%) but although many have benefitted, several find it difficult to meet the requirements for securing the loan as stipulated by TDB. Another scheme coordinated by the bank has encouraged women's groups to pursue income-generating

activities. Timely repayments of the loans accessed are ensured with the support of female extension officers from MAFF.

The Government of Tonga also receives technical and financial support from the Asian Development Bank, the European Union, FAO, the New Zealand Government, the Republic of China and Korea, UNDP and WHO, among other

development partners and donor agencies, to develop and implement as well as monitor and evaluate food and nutrition security policies and programmes.

Strengthening the agriculture-nutrition-income nexus

Strong, evidence-based and adequately resourced actions are needed to address the cultural, social, economic and environmental challenges hindering agri-food systems transformation for improved nutrition outcomes and incomes in Tonga. Existing initiatives need to be better coordinated and scaled up in order to address problems, including: the obesity and NCD crises; the low to stagnant growth in agricultural GDP as a result of the under-performance of agricultural and fisheries sectors; and the threats from climate change, natural disasters and under-investment in agribusiness development. Interventions that seek to focus only on educating the population on nutrition and healthy eating will have very limited effect. This needs to be accompanied by initiatives that create an enabling policy, as well as a regulatory and institutional framework to attract public and private investment in infrastructural developments that increase access to healthy, nutrient-dense local foods and fish that are more affordable and expand income-generating opportunities.

An overarching framework or action plan is needed for leveraging the development of local food crops and fisheries value chains to achieve greater impact on food and nutrition outcomes, and provide sustainable livelihoods and incomes. It would need to be extensive and all-inclusive to benefit smallholder farmers/fishers and rural and urban households engaged in subsistence activities, as well as struggling small and medium-sized agro-enterprises desirous of competing in local and international markets.

With support from the Innov4AgPacific project (see back page) and using a multi-stakeholder, multi-sectoral approach, the Tonga National Action Plan for Agribusiness and Value Chain Development has been developed which addresses four key areas, including: (i) consolidation of the national food and nutrition coordination mechanisms for a healthier Tonga; (ii) improved mechanisms to enhance financial literacy and inclusion as well as business intelligence and entrepreneurship of small producers/agro-enterprises; (iii) development of robust information and communication systems that increase the access to and use of ICTs and (iv) dissemination of robust insurance packages to minimise risks and facilitate quick recovery post-disaster.

Partnerships between government ministries, development partners, the private sector, financial institutions – including TDB – farmers' and other civil society organisations should be strengthened for mobilising resources (human and financial) to implement, monitor and evaluate the framework of agreed priority actions for improving food and nutrition security in Tonga. Such arrangements can be strengthened at the national level, through the leadership of the MAFF and in partnership with the MoH, including TongaHealth and MCTI, and at the regional level when closely aligned to the Joint Action Framework for Food Security and Nutrition in the Pacific Islands 2018-2022 (also known as the Pacific Food and Nutrition Framework).



Further reading

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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" (short project title: Promoting Nutritious Food Systems in the Pacific Islands) 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



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.



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.

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