

CTA Working Paper

# Agriculture–Nutrition Situation in the Pacific Island States

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Paul J.H. Neate





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## Acronyms and abbreviations

ACP	African, Caribbean and Pacific
AFSI	Aquila Food Security Initiative
CFS	Committee on World Food Security
EU	European Union
FNS	Food and nutrition security
FPAN	Fiji Plan of Action on Nutrition
GAP	Global Action Programme on Food Security and Nutrition in Small Island Developing States
GSF	Global Strategic Framework for Food Security and Nutrition
HACCP	Hazardous Analysis and Critical Control Points
IFAD	International Fund for Agricultural Development
NCD	Non-communicable diseases
NFNC	National Food and Nutrition Centre
NGO	non-governmental organisation
OHRRLLS	Office of the High Representative for Least Developed Countries, Landlocked Developing Countries and Small Island Developing States
PIFON	Pacific Island Farmers Organisation Network
SME	Small and medium-sized enterprises
SPC	Secretariat of the Pacific Community
UNDESA	United Nations Department of Economic and Social Affairs
WHO	World Health Organization
WIBDI	Women in Business Development Inc.

## **Executive summary**

In 2016, CTA embarked on a joint project with the International Fund for Agricultural Development (IFAD) entitled '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, the Marshall Islands, Samoa, Solomon Islands, Tonga, and Vanuatu)'. This four-year project aimed at strengthening the capacity of the Pacific island governments, farmer and private-sector organisations and subregional institutions to develop innovative strategies and programmes that can increase poor rural people's access to nutritious and healthy food and to mobilise the funds needed to deliver these. It employed a three-pronged approach:

- Analyse – Build the evidence base
- Act – Build capacity for change
- Advocate – Share good practices and success stories and lobby for policy change and development impact at scale.

Through the project and previous work, a series of rapid country scans were commissioned to collect detailed information on the agriculture, food and nutrition situation in the seven Pacific island nations to determine the entry points that provide the greatest opportunity for strengthening the agriculture–nutrition–income nexus. This document synthesises the key findings from across the countries, draws out lessons for policy and identifies opportunities for future investments to address the key food and nutrition security issues that the islands face.

### **Food systems in flux**

Demand for food is increasing rapidly in the Pacific region, driven by a combination of rapidly growing population and increasing urbanisation.

Pacific people's relationship with food is changing as their diets transition from foods they produced and harvested from land and sea to greater consumption of imported foods that are more readily available, easier to prepare and store and, in most cases, cheaper. Most are energy-dense, highly processed foods, some of questionable quality and nutritive value, and dietary diversity is poor. Fresh roots and tubers, fruit and vegetables and fish are being replaced by highly processed convenience foods that are high in calories but low in nutrients.

The Pacific island states have largely succeeded in reducing levels of undernutrition, although stunting and wasting are still widespread in several countries, indicating suboptimal mother and child feeding practices. This hampers the physical and cognitive development of children and puts women's health at risk. Among adolescents and adults there are rapidly increasing levels of overweight and obesity coupled with micronutrient deficiencies and escalating levels of non-communicable diseases such as diabetes, cardiovascular disease, chronic respiratory diseases and some cancers. These now account for some 75% of all deaths in the Pacific island states. The burden of these afflictions is swamping health services and budgets.

The transition from locally produced to imported foods is also unsustainable financially in the long term. The vast majority of food now consumed in the seven Pacific nations is imported – 90% in the case of the Marshall Islands. The value of food imports more than doubled between 1990 and 2004–06 and has more than doubled again since in several countries. This is putting a strain on the balance of payments and exposes the islands to the vagaries of the global markets.

The studies identified the key drivers of changes in the island states' food systems, including declines in the contribution of agriculture to the islands' gross domestic product, weak and fragmented markets and infrastructure, shortages of arable land, the challenges facing farmers trying to move beyond subsistence agriculture, poor access to credit and lack of strong farmers' and fishers' organisations.

## **A need for greater coordination and integration**

The review of the policies, actions and actors that address agriculture, food and nutrition in the island states showed that most of the seven states have a plethora of policies, programmes and organisations that address various aspects of the agriculture–nutrition nexus. In most instances, these operate independently of each other, with consequent overlaps, duplications and gaps arising as a result. There are numerous examples of efforts aimed at coordinating policies, programmes and projects, the most comprehensive of which is Samoa's use of a sector committee that brings together all key players under the aegis of a parliamentary advocacy group. However, further efforts are needed to strengthen and enhance these efforts to ensure the coordinated action needed, which is widely recognised as a primary requirement in the regional food and nutrition security framework.

The reviews identified a number of gaps that need to be addressed. These include a paucity of up-to-date, accurate data about the agricultural, food, nutrition and health situations in several of the island states. Gender-disaggregated data are generally lacking. This, together with a lack of documented knowledge of the nutritional value of local foods, makes it impossible to make the best use of available resources to achieve food and nutrition security in the region.

## **Gaps and ways forward**

The reviews also highlight a number of key areas where action is needed to improve and strengthen the agriculture–nutrition nexus in the Pacific island states. These include development of integrated agriculture, food and nutrition programmes and projects, greater investment in agricultural, health and nutrition education, strengthening research and extension efforts in all aspects of agriculture, food, nutrition and health, and supporting the development of farmers', fishers' and women's organisations.

The report concludes with extensive lists of indicative actions that governments, public- and private-sector organisations, non-governmental organisations, donors and others can take to address the weaknesses in the agriculture, food, nutrition and health sectors in the Pacific island states.

# Introduction

Since the beginnings of the Green Revolution in the 1940s, and spurred on by Malthusian predictions of impending world-wide famine, agricultural development has focused on increasing yields of a few staple crops and livestock to meet rising demand for macronutrients – primarily carbohydrate, fat and protein. While this approach has been largely successful, an unintended consequence of this drive has been the dominance of monoculture production systems based largely on a handful of crops, the crowding out of more diversified food systems and rising dependency on a few commodities to feed the growing world population.

Some 10% of the world's population is still going hungry every day and malnutrition is still rife. Many countries are confronted with the triple burden of malnutrition – undernutrition, overnutrition (which causes overweight and obesity and contributes to non-communicable diseases) and micronutrient deficiencies (e.g. vitamin A deficiency and anaemia). None of these can be addressed simply by enhancing the productivity of staple crops and livestock (including fish). A radical shift in approach to feeding and nourishing the world's population is needed.

In recent years, many countries have employed nutrition-specific interventions, such as fortifying foods with key micronutrients (e.g. iron-fortified flour and vitamin-A-enriched butter) and providing dietary supplements to the most in need. While these have proven to be useful, they do not address the underlying causes of malnutrition, which include poverty, inefficiencies in food supply and distribution, changing consumer food choices and consumption patterns and lack of dietary diversity. The failure of governments and development agencies to adopt an integrated approach to agriculture, nutrition, health, education and economic development has exacerbated the situation.

Addressing prevailing nutrition and food security challenges requires a multisectoral coordinated response that cuts across health, nutrition, water, sanitation and hygiene, education, social protection, food security and agriculture, trade and the environment and that is underpinned by multidisciplinary and public-sector–private-sector collaboration and adequate public and private investment.

This was well recognised by Pacific leaders when they launched a call for action on food security at the 39th Pacific Islands Forum, held in Niue in August 2008. It is also reflected in the regional food security policy framework, *Towards a Food Secure Pacific: Framework for Action on Food Security in the Pacific* (PIF Secretariat, 2010). This describes a multisectoral and coordinated approach at regional and national levels to address food and nutrition security. The year 2010 also saw the adoption of the *EU Policy Framework to Assist Developing Countries in Addressing Food Security Challenges* (European Commission, 2010).

Agriculture and food have remained high on the agenda for the G8 (now G7) and G20, with the latter issuing yearly action plans and reports, including the 2011 *Action Plan on Food Price Volatility and Agriculture* (G20, 2011) and the 2014 *Food Security and Nutrition Framework* (G20, 2014). This Framework aimed at strengthening growth by increasing investment in food systems, raising productivity to expand food supply, and increasing incomes and quality jobs, in partnership with the private sector. To operationalise and



facilitate the implementation of the Framework, in 2015 G20 leaders endorsed the *G20 Action Plan on Food Security and Sustainable Food System* (G20, 2015).

At the global level, significant commitments have been made to food security and agricultural development, including at the World Summit on Food Security, held in Rome in November 2009 (FAO, 2009), and the 2009 G8 Summit, in L'Aquila, Italy (G8, 2009). As a result, various initiatives have been established, such as the World-Bank-administered Global Agriculture and Food Security Program. Donor countries pledged a total of US\$22 billion to the L'Aquila Food Security Initiative (AFSI), and by 2015 the donors had disbursed 93% of the pledges made at L'Aquila.

The Committee on World Food Security (CFS) was reformed in 2009 and its vision and roles were redefined, aiming to make it “the foremost inclusive international and intergovernmental platform for a broad range of committed stakeholders to work together in a coordinated manner and in support of country-led processes towards the elimination of hunger and ensuring food security and nutrition for all human beings” (CFS, 2017). The *Global Strategic Framework for Food Security and Nutrition* (GSF) provides “an overarching framework and a single reference document with practical guidance on core recommendations for food security and nutrition strategies, policies and actions validated by the wide ownership, participation and consultation afforded by the CFS” (CFS, 2016). The GSF emphasises the importance of coherence across policy areas with a direct or indirect impact on food security and nutrition and calls on “governments to prioritize strategies, policies, programmes and funding to tackle hunger and malnutrition, and the international community to coordinate and mobilize meaningful support ... that is aligned with country priorities” (CFS, 2017).

Key recommendations include setting up or strengthening interministerial mechanisms responsible for national food security and nutrition strategies, policies and programmes that should ideally be formed and coordinated at a high level of government, consolidated in national law, and involve representatives from ministries or national agencies from all areas related to food security and nutrition, including agriculture, social protection, development, health, infrastructure, education, finance, industry and technology. Medium- to long-term actions include:

- improving agricultural productivity and enhancing livelihoods and food security and nutrition in poor rural communities; promoting productive activities and decent employment
- developing and conserving natural resources; ensuring access to productive resources
- expanding rural infrastructure, including capacity for food safety, plant and animal health; and broadening market access and
- strengthening capacity for knowledge generation and dissemination (research, extension, education and communication).

Other key CFS documents include *Principles for Responsible Investment in Agriculture and Food Systems* (CFS, 2014) and the *Framework for Action for Food Security and Nutrition in Protracted Crises* (CFS, 2015).

The Scaling Up Nutrition movement (<http://scalingupnutrition.org/>) was initiated in 2010 as a coordination mechanism to encourage increased political commitment to accelerate reductions in global hunger and undernutrition. As of February 2021, 61 countries are

members of the movement and committed to scaling up nutrition actions: Papua New Guinea is the only Pacific island state to have joined the movement.

The 2014 *Rome Declaration on Nutrition* (FAO, 2014a) and the *Framework for Action* (FAO, 2014b) also highlight the need for holistic, cross-sectoral policies and coordinated action among different actors at all levels to tackle malnutrition in all its forms. The Rome Declaration, which was endorsed by more than 170 member states of FAO and the World Health Organization (WHO), including Kiribati, Samoa, the Solomon Islands and Tonga, builds on the recommendations of the CFS, with additional focus on increasing investments for effective interventions and actions to improve people's diets and nutrition; strengthening and facilitating contributions and action by all stakeholders to improve nutrition and promote collaboration within and across countries; and empowering people and creating an enabling environment for making informed food choices through improved health and nutrition information and education.

The Addis Ababa Action Agenda of the Third International Conference on Financing for Development, held in Addis Ababa in July 2015, also called for increased public and private investment in these areas (UN, 2015). The declaration further noted the need for improved access to markets, enabling domestic and international environments, and strengthened collaboration across the many initiatives in food and nutrition security.

Following on from the Millennium Development Goals, 2015 saw the launch of the 2030 Agenda for Sustainable Development. Food security and nutrition cut across the entire 2030 Agenda as both inputs to, and outputs of, most of the 17 SDGs. Food security and nutrition are strongly linked with poverty eradication (SDG 1), hunger, sustainable food and agriculture (SDG 2 and 12), health and sanitation (SDG 3), education and learning (SDG 4), gender equality and empowerment (SDG 5), equality (SDG 10), conservation and sustainable use of natural resources (SDG 6, SDG 14 and 15).

The start of the 2030 Agenda coincided with the launch of the United Nations Decade of Action on Nutrition (2016–2025), adding impetus to these commitments by providing a time-bound, cohesive framework for action.

July 2017 saw the launch of a new UN action programme – the Global Action Programme on Food Security and Nutrition in Small Island Developing States (GAP) – to address pressing challenges related to food security, nutrition and the impacts of climate change (FAO, UNDESA and OHRLLS, 2017). This is built around three objectives:

- Strengthen the enabling environments for food security and nutrition
- Improve sustainability, resilience and nutrition-sensitivity of food systems
- Empower people and communities for food security and nutrition

GAP notes that “There is consensus ... that comprehensive, whole-of-government, and whole-of-society approaches can most effectively achieve sustained improvements in food security and nutrition” and that “... achieving the goal and vision of the GAP will require active commitment from, and involvement of the diverse range of private actors involved in food systems (from small-scale producers/fishers and micro-enterprises, to cooperatives and multinational corporations), civil society and other non-state actors, local authorities, the scientific community, academia, international organisations, donors and development partners” (FAO, UNDESA and OHRLLS, 2017).

## **Promoting nutritious food systems in the Pacific**

It was against this background that, in 2016, CTA embarked on a joint project with the International Fund for Agricultural Development (IFAD) entitled '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)'. This four-year project aimed at strengthening the capacity of the Pacific island governments, farmer and private-sector organisations and subregional institutions to develop innovative strategies and programmes that can increase poor rural people's access to nutritious and healthy food and to mobilise the funds needed to deliver these. It employed a three-pronged approach:

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## Dietary transitions

Demand for fresh and processed food is increasing rapidly in the Pacific region. This is driven by a combination of rapidly growing population (1.3% on average [FRED, 2018]) and urbanisation (3.8% on average per year). At current rates (2.3%; UNFPA, 2014), the population of the Solomon Islands, for example, will double by 2050. Currently, 38% of Pacific Islanders live in urban areas (ranging between 19% in Samoa and 73% in the Marshall Islands), up from 19% in 1960.

Pacific people's relationship with food is changing as their diets transition from foods they produced and harvested from land and sea to greater consumption of imported foods that are more readily available, easier to prepare and store and, in most cases, cheaper. Most are energy-dense, highly processed foods, some of questionable quality and nutritive value, and dietary diversity is poor. This is in part linked to the lack of adequate food safety laws, regulations and standards and limited capacity to enforce them. These gaps also hamper efforts to exploit export markets, as they limit the Pacific island countries' ability to meet strict food safety and quality regulatory requirements of importing countries.

The vast majority of food now consumed in the seven Pacific nations is imported – 90% in the case of the Marshall Islands. In Tonga, for example, beef imports increased by 220% from 2008 to 2014, chicken by 140%, pork by 100%, hot dogs by 150%, cereals by 170%, fruit by 190% and vegetables by 175%. This is putting a strain on the balance of payments, and exposes the islands to the vagaries of the global markets.

### Box 1: Food imports

The value of food imports more than doubled between 1990 and 2004–06 and has more than doubled again since in several countries.



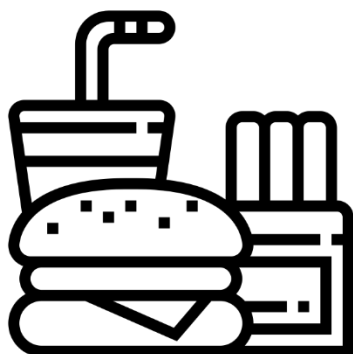
Icon Cc Created by Marc from Noun Project

Traditional food crops that were once widely consumed in the Pacific islands include taro (*Colocasia esculenta*), giant taro (*Alocasia macrorrhiza*), swamp taro (*Cyrtosperma chamissonis*), yam (*Dioscorea* spp.), sweet potato (*Ipomoea batatas*), arrowroot (*Tacca leotopetaloides*), breadfruit (*Artocarpus altilis*), coconut (*Cocos nucifera*), sago (*Metroxylon* spp.), banana (*Musa* spp.), Pandanus (*Pandanus tectorius*), kava (*Piper methysticum*) and mountain apple (*Melanesia syzigium*) (Singh, 2018). Traditional marine resources that were consumed include fish, shellfish (Mollusca), sea cucumbers and sea urchins (Echinoderms) and edible seaweed (Algae) (Singh, 2018). Demand for traditional local staples, such as taro, giant taro, swamp taro, yam and sweet potato, has declined with the increased consumption of imported cereals (wheat and rice). Availability of fresh fish and shellfish has

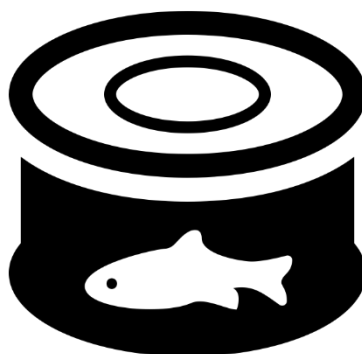
declined. High prices are among the factors contributing to declining demand for local traditional nutrient-dense foods.

### Box 2: Poor diets

Fresh roots and tubers, fruit and vegetables and fish are being replaced by highly processed convenience foods that are high in calories but low in nutrients.



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Between 1990 and 2011, dietary energy supply per person in the seven Pacific island states increased by between 9% (Fiji and Vanuatu) and 17% (Kiribati). The greatest increase in energy supply came from vegetable oils: In Samoa, the proportion of dietary energy provided by vegetable oils increased from 2% in 1990 to 26% in 2011. In Fiji, it increased from 11% in 1990 to 16% in 2011. Currently, the most widely grown energy-dense crops across the Pacific island states include banana, breadfruit, cassava, coconut, sweet potato, taro and yam. Some – cassava, sweet potato, taro and yam, for example – are also among the major export crops, as is the non-food crop, copra.

Fish consumption is among the highest in the world, ranging from 28 kg per person per year in Vanuatu to 70 kg per person per year in Kiribati. Declining stocks, poor management and overfishing are driving up the price of fish and limiting islanders' access to fish as their main source of protein. Fishers also commonly sell fresh fish and purchase tinned tuna and other processed foods for home consumption. Aquaculture is practised in Fiji (prawns and shrimp, mussels and tilapia), Kiribati and the Marshall Islands but mainly to respond to the demand of the hospitality and tourism sector. It does not feature prominently in the other islands.

The main livestock species reared, mainly on a subsistence or semi-subsistence basis, are pigs and chickens. Cattle numbers are increasing in Samoa (up by 50% since 1999) and Tonga (from 10,000 in 2001 to 18,000 in 2015). Vanuatu's National Livestock Policy 2015–2030 envisages "achieving a national cattle herd of 500,000 heads by year 2025" (Government of Vanuatu, 2015), up from 175,000 in 2009. Shortage of livestock feed is a major constraint to increasing livestock productivity.

Fruits and vegetables are widely grown and available for sale. However, as with fresh fish, the farming community tends to use the proceeds of sales to purchase foods of lesser nutritional quality. Consumption of fruits and vegetables is below recommended levels – only 5% of people in Kiribati consume the recommended five servings of fruit or vegetables per

day. However, in Vanuatu, 42% of men and 35% of women consume five or more servings of fruit and vegetables per day.

The Pacific island states boast a rich biodiversity, yet few studies have been carried out on the nutritional value or availability of bioactive compounds in their food and marine resources, and little effort has been made to document islanders' extensive traditional knowledge of foods and their nutritive, medicinal and health benefits (Singh, 2018). Traditional knowledge on production and processing is being lost as a result of urbanisation, exposure to Western culture and loss of contact with farming and fishing, especially among young people.

## **Nutrition challenges**

### **Hunger and undernutrition**

Fiji, Kiribati, Samoa and the Solomon Islands halved the proportion of their populations suffering from hunger between 1990 and 2015, achieving Millennium Development Goal 1. However, poverty is still a challenge. In 2010, 5–7% of the population in Kiribati, Samoa, and Vanuatu were still living under the food poverty line, as were 10–12% cent in Fiji and the Solomon Islands (PIF Secretariat, 2015). Only 2% of the people of Tonga were below the food poverty line in 2009, the most recent data available.

Prevalence of low birthweight is high in the Marshall Islands (18%) and is between 8% and 13% in all the other countries for which data are available (WHO, 2018a). This is reflected in high levels of stunting – indicative of chronic undernutrition – in children under 5 years in several countries (35% moderate to severe stunting in the Marshall Islands, 33% in the Solomon Islands and 29% in Vanuatu) (WHO, 2018a). Only Fiji (8%), Samoa (5%) and Tonga (8%) showed low levels of stunting in children under 5 years. This is a deeply worrying statistic, as there is growing evidence that nutrition during the child's first 1,000 days – from conception up to the child's second birthday – largely determines the child's physical and mental development for the rest of its life. Breastfeeding practices are suboptimal in many of the countries studied; for example, only 57% of mothers in Fiji breastfeed their children within one hour of birth and only 40% exclusively breastfeed their children for the first 6 months (WHO, 2014).

### **Poor maternal and child feeding**

In Kiribati, nearly a quarter of babies are born underweight, and a quarter of children under the age of 5 years are underweight (Box 3). Improvements in mother and child nutrition are vital to give children the best possible start in life.

While most of the countries have policies on feeding infants and young children, only Fiji has fully implemented the International Code of Marketing of Breast-Milk Substitutes – a key element in promoting breastfeeding and its associated health benefits.

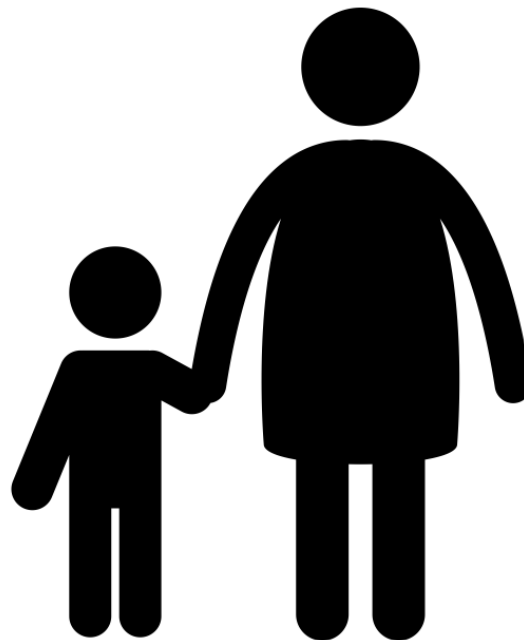
Despite this, prevalence of underweight is low in children of 13–15 years of age, ranging from less than 1% in Kiribati to a maximum of 11% in boys in Vanuatu (5% in girls).

### Box 3: Poor maternal and child feeding

In Kiribati, nearly a quarter of babies are born underweight, and a quarter of children under the age of 5 years are underweight. Improvements in mother and child nutrition are vital to give children the best possible start in life.



Created by Luis Prado  
from Noun Project



Created by Gan Khoon Lay  
from Noun Project

### Micronutrient deficiency

Prevalence of vitamin A deficiency in children ranges from 9% in Kiribati to 17% in Tonga. No comparable data are available for adults.

Anaemia rates in women of child-bearing age are comparable with those for other developing regions, ranging from 21% in Tonga to 39% in the Solomon Islands. Prevalence of anaemia in children under the age of 5 tend to be slightly higher, ranging from 32% in Fiji and Samoa to 40% in the Solomon Islands. Over half of children in the Solomon Islands consume no iron-rich foods such as leafy green vegetables, meat, fish and shellfish (SIG, 2017).

### Overweight and obesity

In contrast, overweight and obesity are increasing problems in the seven island states, with particularly high prevalence of overweight among youth (13–15 years) in Tonga (60% among girls, 50% among boys), Samoa (59% among girls, 43% among boys) and Kiribati (46% among girls, 32% among boys) (WHO, 2018b). Prevalence of overweight is even higher among adults, with Tonga having the highest rates of 86% among men and 91% among women (Global Nutrition Report, 2017).

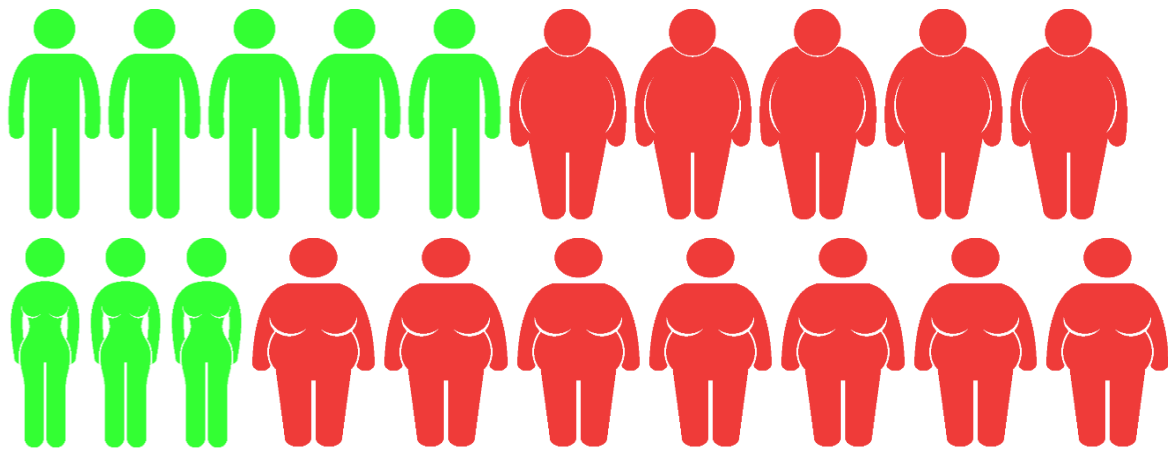
Prevalence of obesity among adults is high across the seven island states, ranging from an average of 28% in Vanuatu to 54% in Samoa. Rates are higher among women than among

men; for example, in Samoa 66% of women over the age of 20 are obese, compared with 44% of men in the age group (Hou, Anderson and Burton-Mckenzie, 2016).

This increase in overweight and obesity is linked with the increasing consumption of high-energy-density processed foods, including sugar-sweetened drinks, the reduction in consumption of fruit and vegetables, and an increasingly sedentary lifestyle, especially among urban populations.

#### Box 4: Obesity in adolescents and adults

Nearly 50% of men and 70% of women in Tonga are obese, and the other island states are not far behind.



Icons cc Created by Gan Khoon Lay from Noun Project

#### Non-communicable diseases

Non-communicable diseases (NCDs) – diabetes, cardiovascular disease, chronic respiratory diseases and some cancers – are now the greatest killer in the Pacific island states, accounting for approximately 75% of all deaths (Hou, Anderson and Burton-Mckenzie, 2016) (Box 5). Some 98% of people in Tonga are judged to be at moderate to high risk of developing an NCD, while one in three people in Samoa are expected to develop an NCD during their lifetime.

#### Box 5: NCDs are a major cause of death

Non-communicable diseases associated with obesity – diabetes, heart conditions and some cancers – cause up to 80% of all deaths in the Pacific island states.





Prevalence of diabetes in the seven Pacific island countries ranges from 13.5% in the Solomon Islands to 30% in Fiji, compared with a global average of 8.5% in 2014 (WHO, 2017a). It is also increasing rapidly, nearly doubling in Fiji from 16% in 2002 to 30% in 2011 and increasing by 53% between 2010 and 2011 in Tonga. Prevalence of hypertension is similarly high, ranging from 17% in the Solomon Islands to 22% in Samoa in 2015 (WHO, 2017c), although this is below the global average of 31%. The occurrence of both of these diseases is strongly associated with obesity.

The cost of treating and managing these diseases is already absorbing more than half of healthcare budgets in many Pacific island countries. Public expenditure on health is already higher than the global average for countries of similar wealth, ranging from 3.5% of GDP in Vanuatu in 2015 to 22.1% in the Marshall Islands (WHO, 2017b).

### **New pathways to address malnutrition**

These changes in food demand, supply, and consumption have had serious consequences for the health and well-being of the Pacific islanders, moving from the 'end of hunger' pattern to one of 'overeating and obesity-related diseases' (Harvard T.H. Chan School of Public Health, 2018).

With this transition in Pacific food systems, new pathways have to be explored and action taken to address the triple burden of malnutrition.

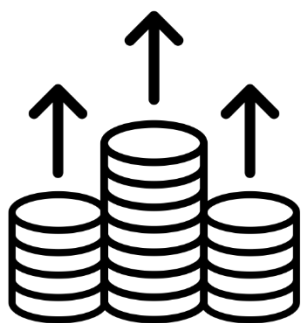
# Drivers of food system changes

## Agriculture and food chains

The importance of agriculture to the islands' economy has declined since the 1990s except in Vanuatu. The percentage of GDP accounted for by agriculture halved in Samoa (from 20% to less than 10%) and Tonga (from 36% to 18%). The percentage of government budgetary allocation to the sector is low, ranging from less than 1% in Fiji to a maximum of 2.6% in Kiribati (Box 6).

### Box 6: Underinvestment in agriculture and nutrition

Governments of the Pacific island states invest tiny amounts in the agricultural and food sector – only 3% of government expenditure in Kiribati and less in all the other island states. This has to increase if the food and nutrition situation is to improve.

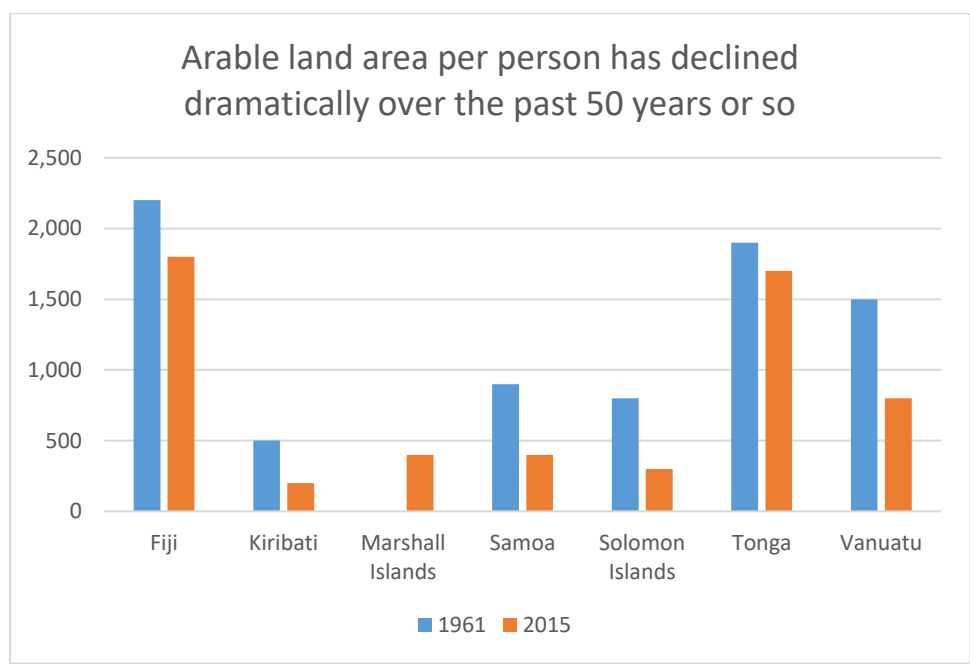
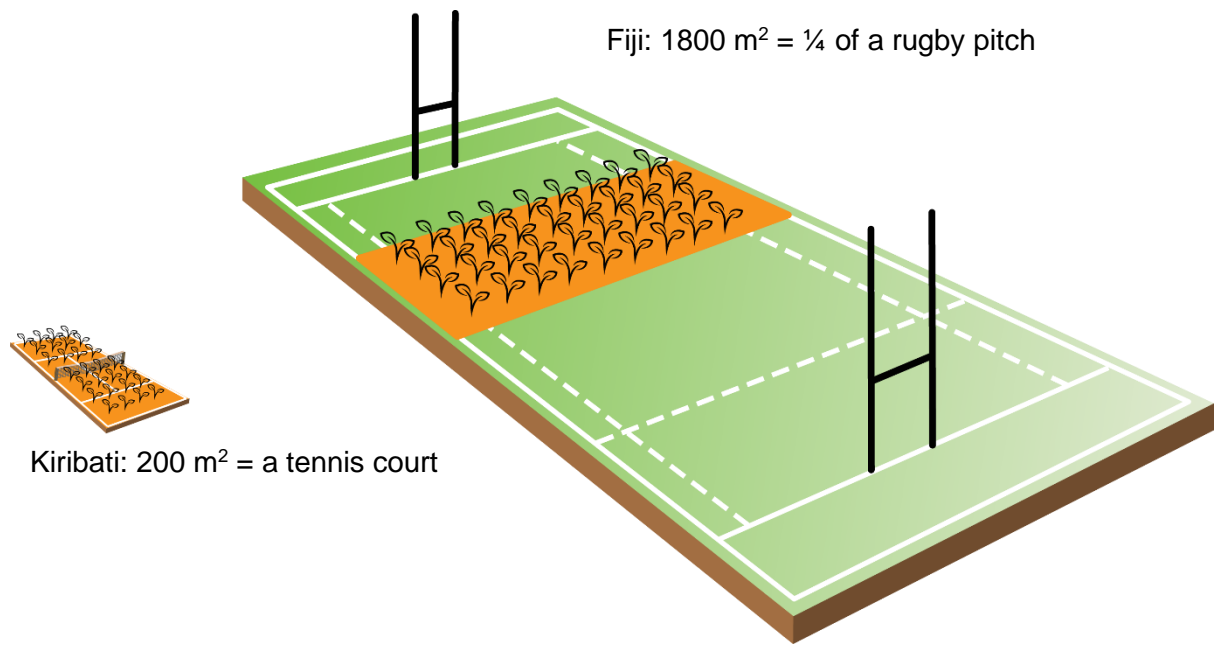


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The agriculture and fisheries sectors in the seven Pacific island states face numerous challenges. These include limited availability of arable land per person, the small size and dispersed nature of their markets, poor transport infrastructure and their remoteness from international markets.

In many of the islands, the amount of agricultural land per person has more than halved since 1961 as a result of population growth, and the amount of arable land available is tiny, ranging from 1,800 m<sup>2</sup> per person in Fiji to only 200 m<sup>2</sup> per person in Kiribati (World Bank, 2018a) (Box 7). This is exacerbated by a large proportion of the available land being left fallow – for example, half in Tonga and 70% in Vanuatu. Rural–urban migration is an underlying factor, with families relocating to urban areas leaving their land uncultivated but unavailable to others who might make use of it.

**Box 7: The amount of arable land available per person in the Pacific island states is small and declining**



The islands also lack adequate storage and processing facilities and other infrastructure needed for the efficient participation in internal and external markets. This discourages investment in improving productivity and developing food value chains. Both government and private-sector investment will have to increase if the agricultural sector is to play its part in addressing the food and nutrition and economic challenges in these countries.

### **Moving beyond subsistence-oriented agriculture and fisheries**

A large majority of the population in most countries (up to 85% in the case of the Solomon Islands) is involved in agriculture and fishing at a subsistence or semi-subsistence level, with very few commercial farmers and fishers. In Fiji, where only 26% of the population are engaged in subsistence or semi-subsistence agriculture, 79% of households grow food for their own consumption. Production is characterised by low use of inputs such as fertilisers and improved crops and livestock. Most production practices are labour-intensive, including manual cultivation.

In Samoa, for example, fewer than 7% of farmers use inorganic fertilisers, while only 13% of farmers in Vanuatu are using improved practices. The limited availability of improved varieties of crops and breeds of livestock that are adapted to the islands' agro-ecosystems is a constraint in all seven countries. This is linked with low public investment in agricultural research and development.

In addition, consumers – and farmers as well – have lost interest in traditional crops, with crops such as taro and cassava losing favour, except when produced and processed for sale in export markets, where they attract higher prices.

Some governments have taken action. The Government of Fiji has identified taro, ginger, rice and yaqona as priority commodities for industry development, based on their potential for food security, income and livelihood generation, export earnings and import substitution. By the end of 2017, five-year development plans had been developed for taro and ginger. However, producers, processors and exporters in Fiji have a longer list of 'priority commodities', including breadfruit, brown rice, coconut, mandarin, plantain, sweet potato, vanilla, vegetables, reef fish and freshwater clam. Cassava is not among the priorities identified by either the government or the other actors, despite being Fiji's number one export crop. And neither are pawpaw and pineapple, the third and fourth most important export crops.

A list of priority commodities, including banana, breadfruit, cacao, cassava, lime, sweet potato and taro, has been identified for the Republic of the Marshall Islands. Samoa identified a shorter list, comprising capsicum, carrot, onion, potato and tomato, ignoring many more widely grown indigenous crops.

Fiji, Kiribati, Solomon Islands and Vanuatu identified key fishery value chains, but none identified important livestock chains except for Vanuatu (beef).

### **Box 8: Trading on success in Fiji**

In just over a decade, Ben's Trading has gone from being a small backyard enterprise to a major export business. Specialising in taro, the company was established by Peni and Maria Moi in 2002. In 2012, it benefited from training, provided by the Pacific Horticultural and Agricultural Market Access Program, on how to boost exports. This included advice on food safety principles, training for office and factory staff and training in auditing. The company subsequently achieved Hazardous Analysis and Critical Control Points (HACCP) certification, which enabled it to rapidly increase its exports to supermarket chains in Australia, New Zealand and the United States.

Today, some 10,000 farmers in Fiji, many living in remote areas, deliver taro to the company's satellite collection centres. The deliveries are inspected and sorted, and farmers are paid straight away. A fleet of some 30 lorries links the satellite collection centres to the company's main collection centre, where the crops are processed for export.

When taro is in short supply, Ben's Trading expects its farmers to supply it with what they have. Loyalty is a two-way street. During times of glut, the company continues to buy from its farmers, even when others are refusing to do business with them. It also takes good care of the 200 workers in its processing sites – many are women from difficult backgrounds – and provides them with transport between home and work. Ben's Trading has won Fiji's 'Exporter of the year – agriculture' award for the past 10 years.

**Source:** Pye-Smith (2017).

### **Access to credit**

Transitioning from small-scale, subsistence-oriented agricultural and fishery operations to more productive, semi- to fully-commercial systems requires considerable financial investment, to fund purchase of inputs and equipment for primary production and to facilitate development of markets and value chains. Financial institutions commonly have a negative perception of agriculture and fisheries, limited knowledge of agriculture-specific risks, the demands of the smallholder farmers and small and medium-sized enterprises (SMEs) and how to market financial services to agricultural clients/agribusinesses, which militates against lending to these sectors. Lack of access to finance is a key impediment to farmers in improving the efficiency of their production and adopting better technologies. Lack of access to credit is also a limitation to value-chain operations. None of the countries have any specific regulation or law governing the provision of agricultural finance; this falls to development finance institutions set up by the governments. Only the Fiji Development Bank, the Development Bank of Samoa and the Vanuatu Agriculture Development Bank specifically refer to agriculture and fisheries, with agriculture being only one of many areas that the development banks aim to support.

There is declining lending to the agricultural sector, except by the Fiji Development Bank (Table 1). The rural sector, including agriculture, receives only a tiny fraction of total lending from both commercial and non-banking financial institutions (development banks and asset leasing companies), ranging from a low of 0.81% in Vanuatu in 2015 to 4.71% in the Solomon Islands in the same year. Purely agricultural lending ranged from a low of 0.79% in Vanuatu in 2015 to a high of 2.96% in Samoa in 2014. Only four commercial banks specifically provide finance to the agriculture sector: ANZ Bank (which operates in all the

Pacific island countries except the Marshall Islands), the Bank of Marshall Islands (which operates only in the Marshall Islands), Bank of Baroda and HFC Bank, both of which operate only in Fiji. Several other banks offer products that could be used to finance agricultural or agribusiness activities but do not specifically target this sector; one (Bank South Pacific) does not accept land zoned as agricultural as collateral.

**Table 1.** Agricultural lending as a percentage of total loans portfolio

	Agriculture as percentage of loans portfolio		
	2014	2015	2016
Fiji Development Bank	13.5	15.9	17.2
Development Bank of Samoa	13.9	10.1	7.4
Tonga Development Bank	10.9	–	7.7*
Vanuatu Aviculture Development Bank	22.3	24.5	21.0

\*Change of financial year end from 31 December to 30 June each year. Above is 18 months performance.

Note: No data available for the Development Bank of Kiribati or the Marshall Islands Development Bank. The Development Bank of the Solomon Islands ceased operations in 1997.

### Farmers' and fishers' organisations

Given the small size of farms and fishing operations, farmers' organisations and cooperatives or similar associations are needed to help aggregate operations to achieve economies of scale for accessing inputs and services, responding to the demands of the market for consistent quantities and quality and to give them a stronger voice in shaping policy as well as negotiating prices in the marketplace. It would also allow for development of shared facilities, such as crop storage and processing. However, support for development of farmer cooperatives or similar member organisations is limited, with only Fiji, Samoa and Vanuatu having programmes explicitly directed to this end. Moreover, it appears that, where such organisations do exist in the Pacific islands, e.g. in Samoa, Tonga and Vanuatu, they are not strong or well integrated. Fiji appears to have a plethora of farmers' organisations, several specialising in a single commodity (e.g. Grazing Livestock Farmers Association, Beekeepers' Association, Pacific Islands Farmers Organisation Network, Fiji Crop and Livestock Council), while Kiribati has at least three farmers' cooperatives and one fishers' cooperative.

### Agricultural education, research, outreach and extension

The poor uptake of improved agricultural practices and new technologies may also be related to weaknesses in agricultural outreach and extension programmes in the islands. For example, a survey in 2013 found that fewer than 16% of farmers in the most populous of the Solomon Islands had received any agricultural outreach from government agencies or non-governmental organisations (RAMSI, 2013). Low adaptive capacity (finance and natural, human and physical capital) in the public sector in several island states – e.g. Kiribati, Marshall Islands, Samoa, Tonga and Vanuatu – exacerbates the problem.

Tertiary education opportunities in agriculture, nutrition and health are limited, with most being offered by the University of the South Pacific at the main campuses in Fiji and Samoa or by distance learning. Moreover, most courses dealing with these subjects are stand-alone and none integrates agriculture, food and nutrition. For example, the National University of Samoa has four separate programmes that have agriculture or nutrition modules, with little or no linkage among them: (i) the Faculty of Education's food and textile technology courses and agriculture courses for trainee teachers intending to teach these areas of the secondary school curriculum; (ii) the School of Nursing nutrition components embedded in various Bachelor of Nursing courses; (iii) the Faculty of Science's course on food security in the Postgraduate Diploma in Science programme; and (iv) the Faculty of Applied Science's Certificate in Tropical Horticulture programme.

This gap in educational opportunities feeds into weaknesses in both agricultural and nutrition research and in outreach and extension, both through shortages of skilled staff and budgets.

### **Box 9: Need to invest in agricultural, nutrition and health education**

There is a shortage of qualified agricultural scientists and practitioners, nutritionists and healthcare workers in the islands. Courses are few and there are none that are cross-disciplinary.



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### **Climate change**

Climate change is now bringing a whole host of additional challenges to the agriculture and fisheries sectors. Rising sea levels and salt-water intrusion in the islands' aquifers are affecting crop production. Increasing ocean temperatures are affecting fish species and their habitats. Changes in rainfall and the frequency and intensity of extreme weather events such as cyclones and hurricanes cause extensive losses. Cyclone Pam, for example, which hit Vanuatu in March 2015, destroyed 90% of farmers' crops. The cost of the damage to Vanuatu's infrastructure and businesses has been estimated at US\$590 million, or more than half of the country's annual GDP. Cyclone Winston, which hit Fiji in February 2016, was the most intense tropical cyclone recorded in the southern hemisphere. The total damage to Fiji has been estimated at US\$1.4 billion, including the loss of most of the coconut palms that are the source of copra, a major export crop for Fiji. No agricultural insurance schemes are available in the Pacific island states, although weather-index-based insurance is being explored by Fiji.

## **Policies, programmes and coordinating mechanisms**

The food and nutrition challenges facing the Pacific island states are multifaceted and need a multisectoral, long-term response to address them. Sectors that influence food and nutrition include agriculture, fisheries, health, education, trade and food industry, and environment, as well as civil society and the private sector. Most of the seven states have a plethora of policies, programmes and organisations that address various elements of the agriculture–nutrition nexus. In most instances, the different actors influencing the food and nutrition situation are working independently of each other, with consequent overlaps, duplications and gaps arising as a result. There are numerous examples of efforts aimed at coordinating policies, programmes and projects, the most comprehensive of which is Samoa’s use of a sector committee that brings together all key players under the aegis of a parliamentary advocacy group. However, further efforts are needed to strengthen and enhance these efforts to ensure the coordinated action needed, which is widely recognised as a primary requirement in the regional food and nutrition security framework.

### **Agriculture, food and nutrition security**

Fiji has 34 major initiatives related to agriculture, nutrition and health and Kiribati has more than 50. A similar situation exists in the other countries. However, these are mostly stand-alone initiatives that deal with only one or two aspects of the agriculture–nutrition–health nexus.

#### **Food and nutrition**

Fiji, Samoa, the Solomon Islands and Vanuatu have overarching policies that refer to ‘food’ and ‘nutrition’ in their titles – Fiji’s National Food and Nutrition Policy 2008 (which is currently being updated), Samoa’s National Food and Nutrition Policy 2013-18, the Solomon Islands’ National Food Security, Food Safety, and Nutrition Policy 2010–2015, and Vanuatu’s National Food and Nutrition Policy (1986). Kiribati has a draft Food and Nutrition Security Policy that has been pending finalisation since 2015; food and nutrition security is currently subsumed within the Kiribati Development Plan 2012–2015, but this lacks a clear nutrition focus. In contrast, the Republic of the Marshall Islands has only a Food Security Policy (2013) and the Food Safety Act, neither of which seems to address nutrition *per se*. Tonga has no national policy relating to food and nutrition, only three Acts that focus primarily on food health – the Food Act 2014, the Health Promotion Foundation Act 2007 and the Consumer Protection Act 2000.

Many of the island states are conducting promotional campaigns to address the nutrition challenges. For example, the ‘Be Marshallese, Buy Marshallese’ campaign in the Marshall Islands promotes locally produced goods and services. Although it does not have a specific food and nutrition focus, it does make explicit reference to combating NCDs and seeks opportunities to substitute local produce for imports. The Ministry of Agriculture and Fisheries in Samoa has made extensive use of television and advertisements to try to raise awareness of the importance of a healthy diet and lifestyle to prevention of NCDs. There have been numerous such programmes in Fiji, including the Ministry of Health’s ‘Act Against Anaemia’ and ‘Act Against NCDs’ campaigns and campaigns by a wide range of agencies,



including non-governmental organisations (NGOs), churches and the private sector, to promote healthy eating.

There are also programmes aimed at improving child nutrition and at promoting healthy eating among school-age children – for example, Fiji’s Food and Nutrition Policy for Schools 2009 and the Food and School Canteen Policy (2017). School and community gardens feature widely, although with differing levels of support. However, nutrition training and education is limited and widely lacking.

In addition to its two school-related nutrition policies, Fiji also had an overarching Plan of Action on Nutrition 2010–2014 and its Five Year Development Plan 2017–2021 has a strong focus on production and consumption of healthy local fresh food and has set some key indicators to monitor progress (Ministry of Economy, Republic of Fiji, 2017). All the other states have various plans and strategies that relate to nutrition, but these generally do not have any agriculture linkages other than promotion of school gardens, which feature in the plans of most of the countries reviewed. For example, the element of the Kiribati National Development Plan dealing with nutritional issues (Key Policy Area 3: Health) refers only to improving outreach of services treating cases of NCDs and efforts to improve and expand awareness of the root causes of NCDs.

Fiji, the Solomon Islands and Vanuatu have published nutritional or health guidelines, while Kiribati, the Marshall Islands and the Solomon Islands have food safety policies and only Fiji, Samoa and Vanuatu have gazetted food standards. However, in December 2017, the Pacific Community released updated nutritional guidelines for the Pacific (SPC, 2017). These build on the 19 *Pacific Islands Food Leaflets* developed by the Secretariat of the Pacific Community (SPC), aimed at boosting awareness of the value of locally grown produce, creating pride in local production and encouraging islanders to produce and consume these traditional foods. Each leaflet provides information about nutrient content, functional properties, storage and preservation techniques, and preparation and cooking, as well as easy-to-follow recipes.

### **Agriculture (including fisheries)**

Fiji, Vanuatu and Tonga have updated agricultural policies and plans – the Fiji 2020 Agriculture Sector Policy Agenda, the Agriculture Sector Policy of Vanuatu 2015 to 2030 and the Tonga Agriculture Sector Plan 2016–20. Fiji, Kiribati, the Marshall Islands and Tonga each have policies and plans relating to the fishery sector – the Fiji National Fisheries Policy, the Kiribati National Fisheries Policy 2013–2023, the Marshall Islands Policies and Priority Actions for Sustainable Mariculture Development and the Tonga Fisheries Sector Plan (2016–24). The Vanuatu Village Fisheries Development Programme dates from 1982. Marine area conservation and fisheries management are common themes in the fisheries sector, and the Marshall Islands and the Solomon Islands have activities addressing aquaculture.

Most Pacific island states have programmes aimed at boosting local production and promoting agricultural diversification. Development of food supply chains and value chains also features in most countries, with the Women in Business Development Inc. (WIBDI) Farm to Table (see Box 10) being one particularly well-known example. However, only Fiji, Samoa and Vanuatu have programmes explicitly directed to support development of the farmer cooperatives or similar member organisations needed to help boost local production.

Moreover, access to improved varieties of local crops is limited, despite the efforts of the SPC Centre for Pacific Crops and Trees and Pacific Islands Tree Seed Centre.

#### **Box 10: Samoa: Women in Business Development's Farm to Table**

Founded in 1991, Women in Business Development Incorporated is a Samoan non-governmental organisation focusing on helping women in Samoa to establish and grow their own businesses, especially in organic and fair-trade sectors. It seeks to empower families with knowledge and skills, opportunities and access to finance and markets.

One of WIBDI's early successes was in developing the production and marketing of organic virgin coconut oil, an enterprise that more than triples the return farmers get from their coconut. Some 200 organically certified farmers in Samoa are now the sole suppliers of virgin coconut oil to the Body Shop for use in its cosmetic products. Body Shop buys more than 20 tonnes of virgin coconut oil each year from WIBDI and the farmers it supports.

WIBDI launched its Farm to Table venture in 2012, building on an earlier project supplying 'organic baskets' – a selection of fruits and vegetables in a basket made from palm leaves – to families in Apia, Samoa's capital. The Farm to Table programme links consumers – both private individuals and restaurants and hotels – with farmers producing organic fruits and vegetables. WIBDI staff collect fruits and vegetables from participating farms and assess what produce will be available the following week. A mobile phone app allows customers to see what will be available the following week and at what price, allowing families and restaurateurs to plan their menus for the week ahead. Another app, the Organic Farm-to-Table, lets locals and tourists alike find restaurants that serve organic food using local products.

WIBDI has since built on this project, running a training programme for young people at its Organic Farm to Table Academy, based in Apia. More than 100 young people had graduated from this programme by the end of 2018, with many going on to establish themselves as organic suppliers to the Farm to Table programme.

For more information on WIBDI and its activities, visit: [https://www.womeninbusiness.ws/women\\_in\\_business.html](https://www.womeninbusiness.ws/women_in_business.html)

None of the agriculture and fisheries sector policies has any nutrition or health-related targets or indicators. In consequence, sectoral ministries still retain responsibility for specific areas of work, resulting in overlap and duplication of efforts.

## **Health**

Fiji, the Marshall Islands and Samoa have health policies – National Wellness policies in Fiji and the Marshall Islands, and the Ministry of Health NCD Policy and Child and Adolescent Health Policy in Samoa. Fiji, Kiribati, the Marshall Islands, the Solomon Islands, Tonga and Vanuatu all have or have had strategies or action plans addressing health, including NCDs. Nutrition is a component of these policies and plans, but is generally approached from a medical perspective, with little reference to agriculture or food production.

## **Gender**

Women play a key role in agriculture and fisheries, both production and marketing, and in family nutrition. For example, Hoddinott and Haddad (1995) showed that a US\$10 increase in women's income results in nutrition and health improvements for children that would require a US\$110 increase in male income. However, a paucity of gender-disaggregated

data means that it is difficult to accurately determine women's engagement in these sectors in Pacific island states. Detailed research is needed across the Pacific to assess their status and see what needs to be done to support women farmers, fishers and their enterprises.

Fiji, Kiribati and Samoa have ministries dedicated to women actively engaged in food and nutrition-related actions. The Solomon Islands has a Ministry of Women, Youth, Children and Family Affairs but this does not appear to have any food- and nutrition-related activities, while the Marshall Islands, Tonga and Vanuatu have no ministry dedicated to women, although Tonga has a women's division within the Ministry of Internal Affairs that is responsible for a national gender policy.

Similarly, few women's groups were identified as participating in the food and nutrition sector, with only three in Fiji, two in Samoa and one in Kiribati.

Fiji, the Marshall Islands and Tonga have gender policies or plans – the Women's Plan of Action 2010–2019 and Women in Agriculture Policy (in preparation) in Fiji, the National Gender Mainstreaming Policy (2016/17) in the Marshall Islands and the National Policy on Gender and Development for Tonga.

## **Need for coordination**

There is a wide range of actors involved in programmes and projects that influence the agriculture, nutrition and health sectors, including government (ministries, agencies, committees and the like), civil society and NGOs, the private sector (including farmers), consumers and donors. For example, at least 24 major governmental agencies and non-governmental organisations (seven international, nine regional and seven national) are working on food and nutrition security and agriculture/nutrition programmes or initiatives in Fiji alone.

### **Government ministries and agencies**

The main focuses of ministries of agriculture and fisheries (or their equivalents) are on research, extension and farmer training/education; provision of seeds, tree seedlings and improved livestock and associated technologies; and establishment and management of marine protected areas. In several cases, these ministries also provide small grants, administer plant and animal quarantine, and oversee quality control on exports and application of food regulations on imports.

Most actions relating to nutrition *per se* fall to ministries of health. Key areas that are common across the countries studied include nutrition monitoring; awareness and promotion campaigns; and training in health and food preparation. In some cases – for example, the running of school gardens – there is considerable overlap with ministries of education and women and the actions of NGOs in several countries.

The involvement of ministries of education largely lies in the development and implementation of school feeding programmes and standards (sometimes in conjunction with ministries of health and with links to ministries of trade and commerce) and in agricultural, health and nutrition education (school through university). Universities and higher-education institutes provide higher education in agriculture, nutrition and health, and conduct research

and extension (e.g. College of the Marshall Islands), the latter overlapping with actions of ministries of agriculture, fisheries and health, and those of many NGOs.

Ministries of commerce (or the equivalent) in several countries have a role in operating food price controls and establishing food standards and labelling (in particular for imports), as well as support for agribusiness development, in conjunction with development banks.

### **Non-governmental organisations**

NGOs are a disparate group and several of them, both local and international, are involved in agriculture, food and nutrition activities in Fiji, Kiribati, Samoa and the Solomon Islands, largely focusing on grassroots development efforts, many with schools and women. NGOs working in Vanuatu include Oxfam and the Farmer Support Organization, while those working in the Marshall Islands include the Canvasback Wellness Center (Box 11).

NGOs are involved in promoting nutrition in schools; community, home and school gardens; extension and farmer education; support for fair trade and organic certification; development of value chains; health and nutrition education (especially for women and children); and community-based initiatives such as marine protected areas.

#### **Box 11: Marshall Islands: Canvasback Wellness Center**

Canvasback Missions started the Wellness Center in Majuro in 2005, in conjunction with the Health Ministry, in response to the increasing incidence of diabetes and other NCDs. The Center operates an innovative, integrated programme aimed at delivering preventive healthcare, in collaboration with a range of local organisations, government departments and individuals.

The Center currently operates a cafeteria and hospital kitchen that serves nutritious food, some of it organic and locally grown. It manages a garden that has made effective use of otherwise empty space (almost 0.2 ha in total) between various ministry or hospital offices or outbuildings. The gardens have supplied the cafeteria and hospital with fresh herbs, fruits and other produce for the past few years.

Building on this, the Center also runs a programme aimed at changing lifestyles of individuals suffering from diabetes and other NCDs. The focus is on teaching people about the causes and consequences of diet-related NCDs and introduces them to healthy eating, including cooking healthy food. The programme also teaches gardening skills to help them grow their own food, as well as advice on exercise and fitness.

Public awareness and outreach to support healthier lifestyles, diets and exercise is a big part of the Center's activities. It assists communities and the Ministry of Education with knowledge, skills and planting materials for home gardening and agricultural interventions to help combat diabetes and other NCDs, and works to improve food safety with school lunch vendors.

### **Private sector**

The private sector does not feature extensively in the food and nutrition sector. The main private-sector organisations that are involved include chambers of commerce, export agencies and the Pacific Islands Private Sector Organisation, which is an umbrella organisation. Fiji and Vanuatu have development banks that support agricultural

development and SMEs – HFC Bank and Fiji Development Bank in Fiji and the Vanuatu Agriculture Development Bank (see ‘Access to credit’ under ‘Drivers of food system changes’).

### **International organisations and donors**

Many international organisations are partnering with government agencies and NGOs in the Island states, with the most broadly represented being FAO, SPC, UNDP, UN Women, UNICEF and WHO.

Australia and New Zealand are the most widely represented donors in the region, closely followed by the Asian Development Bank, the EU and IFAD.

### **Existing coordination mechanisms**

In most instances, the different actors influencing the food and nutrition situation are working independently of each other, with consequent overlaps, duplications and gaps arising as a result.

There are, however, numerous examples of efforts aimed at coordinating policies, programmes and projects, with mixed degrees of success.

The most comprehensive of these is Samoa’s use of a sector committee that brings together all key players under the aegis of a parliamentary advocacy group (see Box 12).

The Solomon Islands’ National Food Security, Food Safety, and Nutrition Policy 2010–2015 mandated three ministries – the Ministry of Agriculture and Livestock Development, Ministry of Fisheries and Marine Resources and the Ministry of Health and Medical Services – to develop and implement a joint plan of action.

Tonga established a National Food Council under the Minister of Agriculture and Food, Forests and Fisheries for the same purpose, but lack of capacity in the Food Division of the Ministry has resulted in the three core ministries involved – MAFFF, Ministry of Health and Ministry of Labour, Commerce and Industries – continuing to operate largely independently of each other. Similarly, Fiji established the National Food and Nutrition Centre to act as a secretariat to coordinate activities of all stakeholders under the Fiji Plan of Action on Nutrition (FPAN), but with limited success. A review of FPAN in 2016 recommended providing “a high-level mandate for the role of the National Food and Nutrition Centre (NFNC) as the central agency for 1) coordinating multisectoral action through supporting the inclusion of nutrition-sensitive activities in the Annual Corporate Plans of line ministries; 2) championing innovation on nutrition; and 3) monitoring the nutrition situation.”

The Marshall Islands established a similar committee – the Food Security Committee – under the leadership of the Ministry of Natural Resources and Commerce to be responsible for establishing a monitoring and evaluation framework for the 2013 Food Security Policy and for preparing regular policy implementation reports. However, it is unclear to what extent this was done and how successful it has been. The Office of the Chief Secretary also has a role in coordination of policies and programmes across all ministries or government departments.

In Kiribati, the ministries having direct responsibilities for food and nutrition are the Ministry of Environment, Lands and Agricultural Development, the Ministry of Health and Medical Services, the Ministry of Fisheries and Marine Resources Development and the Ministry of Public Works and Utilities. These ministries operate independently, with separate mandates, policies, regulations and programmes, although there is a multisectoral National Codex Committee focusing on food standards and quality.

The Government of Vanuatu has recognised the need to strengthen coordination among the many players involved in the food and nutrition sector in its agriculture policy, which calls for the establishment of a Food Security and Agriculture Cluster led by the Department of Agriculture and Rural Development, with provincial focal points, to coordinate and monitor programmes and issues related to food security, climate change and natural disasters. The National Plan of Action on Food and Nutrition Security 2013–2015 also called for the establishment of a Vanuatu National Codex and Food Security Coordinating Council, but it is unclear whether this has in fact been established. Similarly, Tonga’s National Sustainable Development Plan 2016 to 2030 (Department of Strategic Policy, Planning and Aid Coordination, 2016) acknowledges that the success of the plan “requires strong coordination of the partnerships with business, civil society, development agencies and donors, aligning their contributions to national priorities and ensuring programme delivery takes place through national systems”, but provides no detail on how this it to be achieved.

**Box 12: Samoa: Sector committee brings order to multiple players**

The best example of a cross-sector initiative to address the need to coordinate the numerous organisations, policies, programmes and actions across the agriculture, food, nutrition and health sectors is Samoa’s use of a sector committee.

Overseen by the Samoa Parliamentary Advocacy Group for Healthy Living, and supported by the Ministry of Finance, the sector committee brings together all government ministries and agencies involved in these sectors (the Ministry of Agriculture and Fisheries, the Samoa Agricultural Competitiveness Enhancement Project, the Ministry of Natural Resources and Environment, the Ministry of Commerce, Industry and Labour, the Ministry of Health, the National Health Service, the Ministry of Education, Sports and Culture, the Scientific Research Organisation of Samoa and the Ministry of Women, Community and Social Development), together with links with the private sector, academia, civil society and NGOs working in the field. It also provides a single entry point for technical and financial support from the One UN system and the Australian Department of Foreign Affairs and Trade.

The Ministry of Health is mandated as the lead organisation for the National Food and Nutrition Policy.

# Gaps in knowledge and action

## Knowledge

### Data

One of the most obvious gaps in knowledge is in the field of data. Several of the countries studied have weak, fragmented or out-of-date data about their food, nutrition and health situations. Food and nutrition security (FNS) data are not yet systematically collected. Only Tonga has up-to-date data on agricultural production, from an annual survey. Similarly, there is little systematic nutrition and disease surveillance and few gender-disaggregated data. Without access to accurate and up-to-date data, it is unclear how key performance indicators on agriculture and nutrition can be tracked and data used for monitoring progress and informing future policies and programmes.

### Nutritional value of local foods

Another major gap is in knowledge of the nutritional value of local foods. Few studies have been carried out on the nutritional value or availability of bioactive compounds in food and marine resources from the Pacific islands, and little effort has been made to document islanders' extensive traditional knowledge of foods and their nutritive, medicinal and health benefits (Singh, 2018). Without this knowledge, it will be impossible to make the best use of available resources to achieve FNS in the region.

## Action

### Integrated agriculture, food and nutrition programmes and projects

The lack of coordination and integrated planning and implementation of agriculture, food and nutrition programmes and projects results in failure to maximise resources, both human and financial. This also contributes to often conflicting messages and policies coming out of the various agencies. None of the countries has a single ministry or agency that deals with both agriculture and nutrition. For example, the Ministry of Health in Samoa is designated as the lead agency for the National Food and Nutrition Policy, but this does not address food production. The Ministry of Agriculture and Food, Forests and Fisheries in Tonga is responsible for "food and nutrition", but there is no mention of nutrition in its action plans.

A consequence of this is a lack of nutrition-sensitive agricultural policies, programmes and practices, and a focus in many instances on economic outcomes of agricultural interventions, rather than adopting a nutrition lens. This results in limited tangible improvements in either food and nutrition outcomes or incomes and a high dependency on imported foods.

The closest to integrated projects are those that involve school or community gardens, as these address the production of fruits and vegetables of high nutritive value and commonly also have elements of food preparation and dietary advice.

### Agricultural, health and nutrition education

As is common in many parts of the world, there is compartmentalisation in the teaching of food-security-related courses and programmes, including agricultural and nutrition courses.

For example, agriculture curricula in schools and tertiary institutions generally do not have any food or nutrition component.

Educational opportunities in agriculture, nutrition and health are limited, with most being offered by the regional University of the South Pacific or national universities, e.g. the National University of Samoa.

### **Research and extension**

Research and extension are lacking or weak in all aspects of agriculture, food, nutrition and health. This is reflected in inadequate food standards and regulations, nutritional and health guidelines and agricultural innovations, such as adapted crops and livestock and associated production and processing technology. NGOs are often the only source of extension advice.

### **Farmers', fishers' and women's organisations**

There appears to be limited coordination among farmers' and fishers' organisations at national or regional level except for Pacific Island Farmers Organisation Network (PIFON), and a similar situation with respect to women's organisations working on agriculture, food and nutrition. This hinders innovation.



# Way forward

## Data

- Gather and analyse up-to-date gender-disaggregated data on nutrition, health and agricultural production
- Develop and implement FNS/health information system together with disease surveillance and response systems
- Develop the climate-change data, information and knowledge-base covering agriculture, health and environment
- Generate evidence base on business case for agri-nutrition and agribusiness and use this to support development of nutrition-sensitive production systems and value chains

## Governance and regulatory actions

- Adopt a multisectoral approach to FNS. This will require:
  - a framework or body to coordinate FNS policies and actions, e.g. the sectoral committee approach used in Samoa
  - harmonising policy and regulatory frameworks across ministries/sectors
  - integrating actions between ministries and other stakeholders
  - strengthening engagement with private sector and civil society
- Mainstream nutrition in development plans, policies and programmes, including agriculture and fisheries
- Mainstream gender in agriculture, health and development agendas
- Promote the role of women in food production by ensuring that they have access to productive resources, income opportunities, extension services and information, credit, labour and time-saving technologies, and a voice in household and farming decisions
- Build consensus on key agriculture, nutrition and value-chain performance indicators to improve tracking
- Strengthen and enforce food regulations, including providing laboratory infrastructure and training staff to oversee their implementation
- Create platforms to share resources and technical expertise to support roll-out

## Food production

- Increase investment in agriculture, food and nutrition and agribusiness sector
- Improve access to credit for farmers/fishers/SMEs
- Strengthen agricultural extension
- Assess, strengthen and scale-up best practices
- Increase local production of and access to affordable, nutrient-dense foods
- Promote and build on traditional knowledge and agricultural practices
- Enhance collaboration among existing projects/interventions
- Address over-exploitation and unsustainable development of coastal fisheries

## **Agriculture–nutrition interface**

- Conduct public awareness/education campaigns on agricultural and nutritional issues targeting specific age and gender groups
- Promote awareness of nutritive and health value of local foods
- Promote consumption of local crops/foods, e.g. fruits, vegetables and fish
- Discourage consumption of unhealthy foods, e.g. through tax measures and import duties
- Improve school feeding and nutrition education, e.g. through school gardens and agricultural and nutrition curricula

## **Value chains/markets/infrastructure**

- Develop markets/value chains for local produce, including infrastructure, processing facilities, storage and transport, and support for SMEs
- Develop and promote improved processing for traditional crops and foods
- Develop farmers'/fishers'/women's organisations/cooperatives
- Enhance linkages of local producers with tourism/hospitality sector
- Foster public–private producer linkages

## **Health**

- Raise awareness of NCDs, their causes and actions that the individual can take to reduce risks
- Promote consumption of healthy, nutrient-dense, beneficial traditional foods (crops and fish)
- Conduct communication campaigns and training about nutrition and health (especially targeting women)
- Implement micronutrient fortification (e.g. iron and iodine)

## **Education and training**

- Strengthen training capacity in agriculture, food and nutrition
  - Nutrition education at school level (to include parents)
  - Nutrition education at tertiary level
  - Agricultural education at school level
  - Agricultural education at tertiary level
  - Farmer/fisher training
- Integrate educational programmes for nutrition, food production, processing, business and hospitality

## **Research and development**

- Increase support for agricultural and food research and development
- Research consumer attitudes to food, nutrition, diet etc.
- Research nutritional value or availability of bioactive compounds in food and marine resources from the Pacific islands

- Document islanders' extensive traditional knowledge of indigenous foods and their nutritive, medicinal and health benefits
- Develop climate-resilient crops, livestock and production systems
- Implement community-based biodiversity conservation

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