



MARKET STUDY OF FRUIT AND VEGETABLES FROM ACP-PACIFIC COUNTRIES

OCTOBER 2021



ABOUT COLEACP, ITS PROGRAMMES AND SERVICES

The Europe-Africa-Caribbean-Pacific Liaison Committee (COLEACP) is a private sector network of companies, professional organisations and experts from African, Caribbean and Pacific (ACP) and European Union (EU) countries committed to sustainable agriculture. COLEACP's mission is to develop inclusive and sustainable trade in agricultural and food products (particularly fruit and vegetables), primarily within the ACP States and between these countries and the EU. For 45 years, COLEACP has been pioneering a new model of collective social responsibility, combining global reflection and local action for the benefit of the ACP-EU fruit and vegetable sector by focusing on the development of human capital. COLEACP is committed to combining economic, social and environmental transition to lay the foundations for new partnerships within agri-food value chains.

Since its creation, COLEACP has been managing development cooperation programmes in the ACP agriculture and food sector. COLEACP's two main programmes currently being implemented are Fit For Market and Fit For Market SPS, funded by the French development agency (Agence française de développement, AFD) and the European Union (EU, both programmes) in agreement with the Organisation of African, Caribbean and Pacific States (OACPS, formerly the ACP Group of States). Fit

For Market and Fit For Market SPS are part of the Intra-ACP Indicative Programme (2014-2020) for cooperation between the EU and the OACPS. They form part of EU support for medium- and long-term policies aimed at strengthening productive capacity, stimulating innovation, and improving the sustainability and competitiveness of the ACP private sector. The overall objective of the two programmes is to contribute to poverty reduction, improve food security and food safety, and achieve sustainable and inclusive growth by strengthening the ACP agri-food export sector. The specific objective is to enable smallholders, farmers' groups and organisations, and micro, small and medium-sized enterprises (MSMEs) to access national and international horticultural markets by complying with sanitary and phytosanitary (SPS) standards and market requirements in a sustainable framework.

Since the launch of Fit For Market (2016) and Fit For Market SPS (2019), COLEACP has received nearly 900 requests for support from companies and private and public actors representing the collective interests and diversity of challenges facing the agri-food industry in ACP countries. The volume and frequency of requests for support addressed to COLEACP demonstrate not only the growing needs, but also the dynamism of the sector in these countries in domestic, regional and international

markets. COLEACP individually or collectively supports all these actors in improving their managerial, technical and educational skills with the objective of improving their competitiveness through the adoption of sustainable practices.

In addition to its intra-ACP activities, COLEACP also manages national programmes (Cameroon, Guinea and Togo) in sub-Saharan Africa financed by the Standards and Trade Development Facility (STDF). The main objective of these programmes is the strengthening of SPS control systems in agricultural value chains. COLEACP started a new national programme in May 2020: NExT Kenya, funded by the EU and implemented in collaboration with the EU Delegation in Nairobi. NExT Kenya aims to increase the resilience, inclusiveness and sustainability of Kenya's horticultural value chains.

COLEACP is organised into seven departments: Technical Assistance; Training; Research & Innovation; Market Intelligence; Advocacy; Information & Communication; and Business Development. The activity of each service is financed by cooperation programmes. Each service is accessible to COLEACP members and beneficiaries of its programmes. This market study is part of the activity of the COLEACP Market Intelligence department.



CONTENTS

1	INTRODUCTION	5	5	EXPORTATION OF HORTICULTURAL PRODUCTS BY ACP-PACIFIC COUNTRIES	55
1.1	Background to the study	6	5.1	Factors influencing exportation	56
1.2	Objectives of the study	7	5.2	Subregional trade of the ACP-Pacific countries	56
1.3	Scope of the study	7	5.3	Export at the regional level (Oceania)	59
1.4	Limitations of the study	9	5.4	Export trade of ACP-Pacific countries at the global level	62
1.5	Organisation of the study	9	5.5	Specific market segments for exported commodities	68
2	METHODOLOGY	11	5.6	The ACP-Pacific countries' food trade imbalance	73
2.1	How the work was conducted	12	5.7	A heavy trade imbalance, but...	73
2.2	Data collection and processing	12	6	MARKET OPPORTUNITIES FOR SELECTED HIGH-VALUE HORTICULTURAL PRODUCTS	75
2.3	Methodological challenges	12	6.1	Support for market opportunities	76
3	PRODUCTION OF HORTICULTURAL CROPS IN ACP-PACIFIC COUNTRIES	13	6.2	Market, promotion and prices for selected high-value products	77
3.1	Agricultural background of ACP-Pacific countries	14	6.3	Going organic to increase value	90
3.2	Factors influencing local production	14	7	SWOT ANALYSIS FOR DEVELOPING THE HORTICULTURAL INDUSTRY IN ACP-PACIFIC COUNTRIES	91
3.3	Main producing countries in the ACP-Pacific	15	7.1	SWOT analysis for the domestic market	92
3.4	Main crops grown (fruit, vegetables and spices)	17	7.2	SWOT analysis for the regional market	96
3.5	Positioning ACP-Pacific countries to compete with other suppliers	28	7.3	SWOT analysis for the international market	98
3.6	A production dominated by roots, tubers and coconuts	32	7.4	Summary and conclusion for the section	100
4	IMPORTATION OF HORTICULTURAL PRODUCTS BY ACP-PACIFIC COUNTRIES	33	8	CONCLUSIONS	101
4.1	Factors influencing importation	34	8.1	Summary of key fruit and vegetables in terms of status	102
4.2	Imports to the ACP-Pacific countries	37	8.2	Conclusion of the study	102
4.3	Overview of commodities imported by ACP-Pacific countries	40	REFERENCES	104	
4.4	Overview of imported commodities by region of origin in 2018	44			
4.5	Growing imports, leading to health issues	53			

ACRONYMS AND ABBREVIATIONS

ACP	African, Caribbean and Pacific Group of States (now OACPS)	ICT	Information and Communications Technology
AFD	French development agency (Agence française de développement)	IFPRI	International Food Policy Research Institute
CEPII	Centre d'Etudes Prospectives et d'Informations Internationales	NCD	Non-Communicable Disease
CIF	Cost, Insurance and Freight	NGO	Non-Governmental Organisation
Codex	Codex Alimentarius	OACPS	Organisation of African, Caribbean and Pacific States
COLEACP	Europe-Africa-Caribbean-Pacific Liaison Committee (Comité de Liaison Europe-Afrique-Caraïbe-Pacifique)	PHAMA Plus	Pacific Horticultural and Agricultural Market Access Program
COVID-19	Coronavirus disease 2019	PNG	Papua New Guinea
EU28	European Union (28 countries, including the United Kingdom)	SPC	Secretariat of the Pacific Community
Eurostat	statistical office of the European Union	SPS	Sanitary and Phytosanitary
FAO	Food and Agriculture Organization of the United Nations	STDF	Standards and Trade Development Facility
FAOSTAT	FAO Corporate Statistical Database	SWOT	Strengths, Weaknesses, Opportunities and Threats
FOB	Free on Board	UN	United Nations
GDP	Gross Domestic Product	WHO	World Health Organization



EXECUTIVE SUMMARY

For a long time, agriculture was the backbone and source of livelihood for the African-Caribbean-Pacific (ACP) Pacific countries' economies until the tourism sector made strong inroads. The agricultural sector within the countries has faced many challenges over recent years, especially since 2008, the period covered by this study.

However, the rise in new supply channels driven by health awareness and the increased demand for some key products that ACP-Pacific countries produce, prosperity in developed countries and new marketing opportunities for locally processed value-added products, are giving hope for sustainable development for micro, small and medium-sized enterprises (MSMEs) within the horticultural industry in ACP-Pacific countries.

This market study of fruit and vegetables of ACP-Pacific countries aims to gain an in-depth understanding of the trade dynamics and market trends at the regional, national and international levels, and to identify value-added supply chains for actors in the fruit and vegetables industry of ACP-Pacific countries.

Overview of the state of fruit and vegetables trade in the ACP-Pacific countries

The top three **vegetables produced** in the region in terms of volume are sweet potato (853,146 tonnes in 2018; up 22.1% between 2008 and 2018), ethnic roots and tubers (442,194 tonnes; +14.8%) and yams (438,295 tonnes; +21.9%). The only vegetable in the top 10 to decline was taro (cocoyam). The three most **produced fruits and nuts** in volume are coconut (2.82 million tonnes; +0.1%), bananas (1.45 million tonnes; +41%) and ethnic fruits

(107,699 tonnes; +19.5%). Plantain and papaya saw significant drops in production of 18.2% and 38.3%, respectively. All the **spices produced** showed a decrease in volume produced, except ginger that showed significant growth of more than 300% to almost 10,000 tonnes. The other two most produced spices are "other spices" (1,004 tonnes) and vanilla (675 tonnes).

Although the ACP-Pacific countries are making efforts to produce sufficient fruit, vegetables and spices to meet local needs, they are becoming increasingly dependent on imports. The demand for imported food is supported by two main factors: the ever-growing tourism sector, reluctant to buy local; and the growth of urban populations that appreciate more imported processed food. Most of the imported products are from Australia and New Zealand. Overall, importations in the ACP-Pacific region have increased since 2008. The top three **fresh vegetables imported** are potato (27,478 tonnes in 2018; +44% between 2008 and 2018), onion and shallot (18,195 tonnes; +48%) and dried peas (6,348 tonnes; +3%). The three most **imported fruits and nuts** are apple, oranges and grapes, which are all impossible to grow in the ACP-Pacific region. Importation of fresh produce has seen a significant general increase. The same trend is observed for **imported processed fruit and vegetables**, among which the three main commodities are frozen potato, mixed juices (fruit/vegetable) and groundnut. Most importations of processed products are earmarked for the hotel industry.

The ACP-Pacific countries also export some of their products to the outside world, as well as among themselves. Export volumes are about 25% of the importation volume, resulting in a negative





trade deficit. The three main **commodities traded internally among ACP-Pacific countries** are mixed juices; fresh, frozen and processed potato; and mixtures of frozen vegetables. The main exporter is Fiji, which accounts for 95% of the intraregional exports in 2018, and acts as a trade hub and port for other ACP-Pacific countries. The bulk of the export trade to the rest of the world is conducted within the Oceania region, with Australia and New Zealand being the main destinations. The main **commodities exported to the Oceania region** are vegetables (77% of total exports to Oceania), mainly ethnic roots and tubers (50% of all exports to the Oceanic region), cassava (10%) and ethnic vegetables (7.5%). Fruit and nuts represent 19% of total exports to Oceania, with coconut being the dominant commodity (12%). **Internationally**, the trade with East Asia, North America and the European Union (EU28) is much smaller than trade in the intraregional markets.

Food security and health

Some of the ACP-Pacific countries are not self-sufficient in food production, especially small island states where agricultural land is scarce and high tides result in saline (salty) soil. **Food insecurity**, mainly in smaller islands, is caused by a number of factors, but the key one is the frequency of cyclones and natural disasters. These have a great impact on crop and livestock production.

Moreover, non-communicable diseases, such as **obesity** and **overweight**, are a major health issue. Globalisation has opened the ACP-Pacific countries to the international food markets and encouraged people to move away from the consumption of local food to some unhealthy 'western' diets, such as fast food, unhealthy processed food, meat, energy-dense food and carbonated drinks.

Furthermore, the **COVID-19** pandemic complicated ferry transport between the islands and impacted trade.

Opportunities

To some extent, **prospects** exist for some fresh vegetables, especially roots and tubers, in the regional markets. For the international market, products such as ginger, vanilla, turmeric, kava, virgin coconut oil and noni have the potential to be developed, especially in organic forms, to enhance their access to niche markets. These products and their derivatives are in very high demand in developed countries.

The **tourism sector** taking over from agriculture as the key economic contributor to the gross domestic product (GDP) in the past 30 years also contributed to the significant decrease of productivity of agriculture in most ACP-Pacific countries. However, it offers an opportunity for "organic tourism", for agriculture and tourism sectors to work together for synergistic effects in food production, as there is increasing demand from tourists for local organic food.

Some **companies** based in ACP-Pacific countries, such as Nishi Trading, Herbex, Nature's Way Cooperative and Serendi Coco Samoa, are taking the initiative to adopt strategies to ensure sustainable entry and performance in high-value markets. Organisations such as the Pacific Horticultural and Agricultural Market Access Plus Program (PHAMA Plus) are working hard to accelerate the performance of these companies and to facilitate the creation of enabling environments by influencing policies with national institutions at the regional level. Overall, horticulture has a major role to play in the achievement of both the health and

economic well-being of the ACP-Pacific countries. Special attention needs to be paid to development of value chains that will increase the domestic production of fruit and vegetables consumed in the region, including emphasis on ethnic fruit and vegetable consumption. The focus might also be on fruit and vegetables that increase the prospects of exports, or that substitute importations (when it is possible to grow the imported commodities in ACP-Pacific countries). In doing so, the widening import-export gap, detrimental to both the health and the economic needs of ACP-Pacific countries, can be bridged.

The market study will finally have made it possible to characterise the main market segments of the horticultural sector in the Pacific ACP countries, namely:

Crop		Market		
		Domestic	Regional	International
Fruits	Bananas	C O	C	C
	Kava		C O	C O
	Noni	C	C O	O
	Pineapple	C O		
	Watermelon	C O		
Vegetables	Roots and tubers	C	C O	
	Coconut	C O	C	C
(Processed) Coconut	Copra		C	C
	Virgin coconut oil		O	C O
Spices	Ginger		C O	C O
	(Black) pepper		O	O
	Vanilla		C O	C O
	Turmeric		O	O

C = Well established and mature market segment

O = Market segment with potential and development opportunities

CO = Well established market segment with further growth opportunities





1

INTRODUCTION

COLEACP is a private sector inter-professional not-for-profit association established in 1973 by stakeholders in the international fruit and vegetables trade. As a network of companies, professional organisations and experts, COLEACP is committed to inclusive and sustainable agriculture. COLEACP aims at empowering ACP (Africa-Caribbean-Pacific) horticultural enterprises to embrace opportunities on their domestic and regional markets and to improve their access to international export markets.

In this context, the COLEACP Market Intelligence Department carries out market studies on the horticultural sector. This market study focuses on the ACP-Pacific region. A market study analysing the horticultural sector in sub-Saharan Africa was published in 2020. A third market study dedicated to the ACP-Caribbean countries is planned for the near future.

This market study provides improved understanding of the economic and commercial status of the horticultural market in the ACP-Pacific countries to support private and public actors in the countries' horticultural value chain. This market study also provides COLEACP members and partners with an overview of the most recent trends in trade and markets of ACP-Pacific fruit, vegetables and spices.

1.1 Background to the study

Various challenges faced by the agricultural and food sector of ACP-Pacific countries – for example, increasing urban and tourist demand, weak infrastructure and ineffective agricultural practices – have led to the importation of agricultural products or and, in some cases, dependence on import products. This has made ACP-Pacific countries vulnerable to global

economic shocks. ACP-Pacific countries are also faced with various other threats such as climate change, access to water and land, urban and international migration, increased diversity of consumer demand, poor infrastructure and logistics, limited electricity, inadequate supply of funds for small businesses, and lack of support and finance to meet market demands. These challenges have been exacerbated by the recent COVID-19 pandemic, which has slowed the international market and will continue to interrupt it for some time. However, the ACP-Pacific region contains a fair share of fertile arable land, which could be used to stimulate agricultural growth and increase local food security. The adoption of technological innovations would further enhance effective and efficient use of resources, including water, fertilisers and plant protection products, by farmers to ensure operational cost reduction and environmental sustainability.



1.2 Objectives of the study

The study focuses on the fruit and vegetable sector of the ACP-Pacific countries.

The specific objectives of the study are as follows.

1. To gain a comprehensive understanding of trade dynamics and market trends regionally, nationally and internationally as applied to ACP-Pacific countries.
2. To identify value-added supply chains for actors in the fruit and vegetables sector of ACP-Pacific countries.

1.3 Scope of the study

The study is defined within the following limits.

1.3.1 Coverage of products

This study provides an analysis of the fruit and vegetable market in the ACP-Pacific countries, identifies current trends and highlights trade opportunities. To capture the full potential of the ACP-Pacific countries, the scope of this study includes more than fresh fruit and vegetables. A large part of the trade potential for ACP-Pacific countries lies in the production of high-value products. Therefore, this study includes certain spices which are mostly grown in combination with other horticultural products, such as pepper, ginger and vanilla, as well as certain processed products and oils. Thus, the study covers products from Chapters 07, 08, 09, 15 and 20 of the Harmonized System of the World Customs Organization (WCO, 2021).

Other major agricultural products, such as cocoa, coffee, tea, cane sugar and cereals are not considered.

1.3.2 Geographical coverage

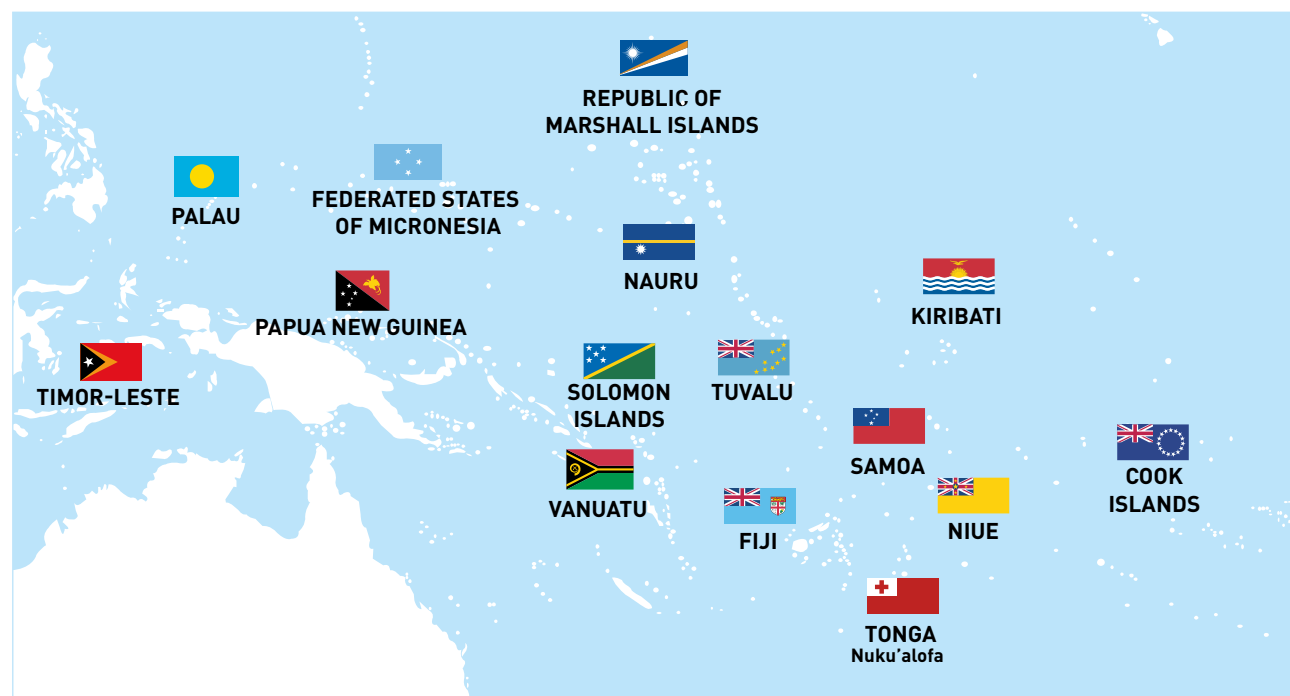
The Pacific Island Countries (PIC) comprise 25 nations and territories spread over more than 25,000 islands and islets of the western and central Pacific Ocean. There is great cultural diversity in the region, and some 1,200 languages are spoken, with English and French often being official languages. PIC have been traditionally grouped along racial

and cultural lines as Melanesia, Micronesia and Polynesia (Christie and Thakur, 2018).

This study, however, focuses on the 15 member countries of the Organisation of African, Caribbean and Pacific States (OACPS) (herein referred to as the ACP-Pacific countries), namely: Cook Islands, Fiji, Kiribati, the Marshall Islands, the Federated States of Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvalu and Vanuatu.

This study, however, focuses on the 15 member countries of the Organisation of African, Caribbean

Figure 1: Geographical coverage of this market study (Source: Adapted from UNFPA Pacific Sub-Regional Office, 2014)



and Pacific States (OACPS) (herein referred to as the ACP-Pacific countries), namely: Cook Islands, Fiji, Kiribati, the Marshall Islands, the Federated States of Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvalu and Vanuatu.

These countries show significant differences in their surface areas, territorial profiles (archipelagos, islands), composition of soil and populations (which again varies between the urban and rural population). Table 1 presents area and demographic information on the 15 ACP-Pacific countries by geographical and cultural regions.

ACP-Pacific countries also show great differences in their geographical remoteness from larger economies. The overall trade trends presented in this market study tend to be dominated by the biggest economies, primarily Fiji and Papua New Guinea.

The three cultural subregions also include other countries that are not members of the OACPS. However, in the context of this work and given the fact the OACPS members form the majority of the PIC, conclusions from this market study can be extended to other island countries of the Pacific.

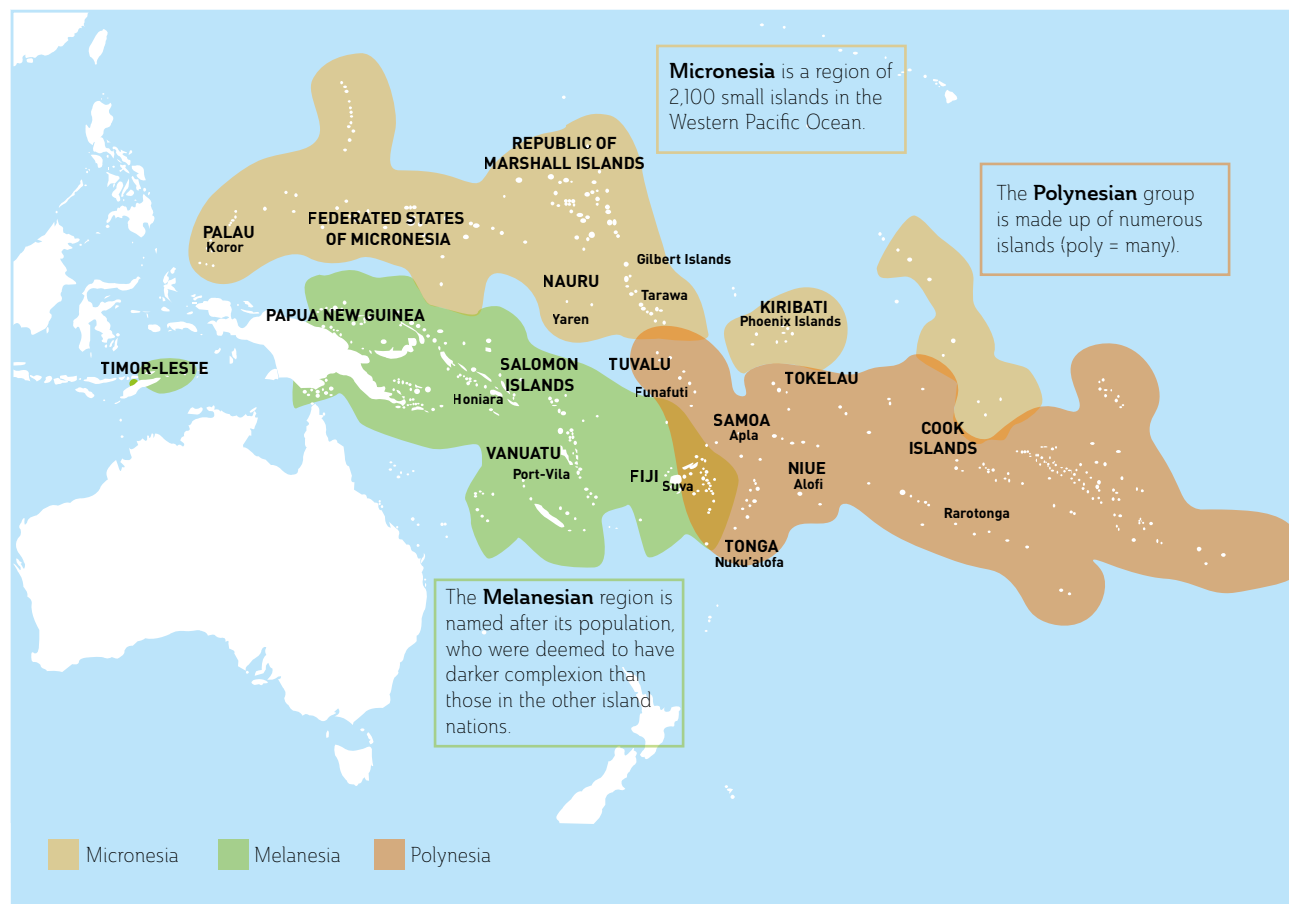


Table 1: *The ACP-Pacific countries by cultural group: area and population*

Cultural group and countries	Rank in terms of land area	Land area [km ²]	Arable land area as % of total land area [2018]	Population [2018]	Population density [inhabitants per km ²]
Melanesia					
Papua New Guinea	1	462,840	2.63	8,606,323	18.59
Solomon Islands	2	30,407	4.18	652,857	21.47
Fiji	3	18,273	23.26	883,483	48.35
Timor-Leste	4	14,874	25.55	1,267,974	85.25
Vanuatu	5	12,281	15.34	292,680	23.83
Polynesia					
Samoa	6	2,785	26.75	196,129	70.42
Federated States of Micronesia	8	701	31.43	112,640	160.68
Tonga	9	650	48.61	103,197	158.76
Niue	11	261	19.23	1,620	6.20
Cook Islands	12	237	6.25	17,518	73.92
Tuvalu	14	26	60.00	11,508	442.62
Micronesia					
Kiribati	7	811	41.98	115,847	142.84
Palau	10	444	19.35	17,907	40.33
Marshall Islands	13	181	47.78	58,413	322.72
Nauru	15	21	20	10,670	508.01

Source: COLEACP based on FAOSTAT (2021).

Figure 2: Cultural regions coverage of this study (Source: Adapted from Pacific Community and WFP, 2018)



1.3.3 Scope of demand

This market study analysed the demand at three levels, namely local, regional and international. Both current and potential demand were taken into account to provide development perspectives to the different actors of the value chains.

1.4 Limitations of the study

Most of this work was carried out in 2020, during the upsurge of COVID-19 globally and the eventual lockdown experienced in most countries. This slowed down the progress of the work. Similarly,

the travel embargo on many countries significantly reduced travel by COLEACP staff and consultants/experts to collect primary data. Consequently, most of the work was done remotely.

Another limitation of the study was that there were limited available official data or research findings, especially for the smaller ACP-Pacific countries. This limitation was countered by qualitative analysis via an extensive review of literature on the area of study and interviews with selected actors in the sector and consultants from the COLEACP network.

1.5 Organisation of the study

The study is organised into eight (8) sections as follows.

Section One is the introduction. Section Two is mainly on the hybrid methodology used, combining both the quantitative and qualitative data. Section Three is mainly on agricultural production in the ACP-Pacific countries, with special emphasis on horticultural crops (fruit and vegetables) and spices. Section Four looks at imports of horticultural products by ACP-Pacific countries between 2008 and 2018. Section Five looks at the performance of ACP-Pacific countries in terms of exports. Section Six centres on specific market segments to focus on for the development of specific horticultural products. A strength, weakness, opportunity and threat (SWOT) analysis was conducted (Section Seven) for the domestic, regional and international markets for horticultural products of ACP-Pacific countries. Section Eight summarises and concludes the study; recommendations to be considered for future actions are also made in this closing section.





2

METHODOLOGY

2.1 How the work was conducted

This work was conducted using a hybrid methodology, combining quantitative and qualitative analysis. The analysis is based on statistical data, general trends highlighted in the literature and interviews with key stakeholders in the sector. This analysis was done at three distinct levels, namely the domestic market, the regional market (inter-island trade including that with Australia and New Zealand) and the international market.

2.2 Data collection and processing

The statistical analysis was carried out using data kindly made available by the International Food Policy Research Institute (IFPRI), Centre d'Etudes Prospectives et d'Informations Internationales (CEPII), Food and Agriculture Organization of the United Nations (FAO) and national statistics bureaus of the ACP-Pacific countries. The data collected was processed by COLEACP to obtain details at the level of production and the trade flows for some of the products.

The period covered by the study is from 2008 to 2018 (or 2017 for some commodities). This period

was considered by the authors to be the most recent period for which reliable and verifiable data were available. The data available for later years is still incomplete and does not reflect the realities of the market.

As a part of the summarisation process of the data and to improve the readability of tables and graphs, commodity names at 6-digit level of the Harmonized System (HS) are shortened and sometimes grouped. For example, "beans" can refer to HS code 0708.20 Fresh or chilled, shelled or unshelled beans *Vigna* spp., *Phaseolus* spp., but also to HS codes 2005.51 and 2005.59 which represent Vegetable preparations; beans, shelled, prepared or preserved otherwise than by vinegar or acetic acid, not frozen and *Vegetable preparations; beans, (not shelled), prepared or preserved otherwise than by vinegar or acetic acid, not frozen*. Whether fresh or processed beans are indicated by the short name will be clear from the section, graph or table heading. This also explains why sometimes the same commodity name appears in both fresh and processed summary tables.

The use of "ethnic" in the short commodity names refers to groups of fruit or vegetables that are not elsewhere specified in the HS system and are grouped in categories with very long names. For example, "Ethnic roots and tubers" refers to

HS code 0714.90: *Fresh, chilled, frozen or dried, whether or not sliced or in the form of pellets, and sago pith arrowroot, salep, Jerusalem artichokes and similar roots and tubers with high starch or inulin content (excl. manioc 'cassava', sweet potatoes, yams, taro and yautia)*.

2.3 Methodological challenges

There were limited official data or research available, especially for the smaller ACP-Pacific countries. This limitation was balanced with the qualitative data collected. The qualitative analysis was conducted via an extensive review of literature, and interviews with key actors in the sector and consultants from the COLEACP network, covering trends in the different markets, the marketing mix and other relevant information from selected countries.

Particular attention was focused on Papua New Guinea in this study, because it is the biggest producer of fruit and vegetables among all the ACP-Pacific countries. In addition, it is by far the largest country among the ACP-Pacific countries, covering about 85% of the land mass and about 70% of the population at the time of this market study.





3

PRODUCTION OF HORTICULTURAL CROPS IN ACP-PACIFIC COUNTRIES

3.1 Agricultural background of ACP-Pacific countries

Agriculture has been the backbone of the ACP-Pacific countries' economy and is the main livelihood for most of the population in the region. Commercial farming is less common than subsistence and semi-subsistence farming. Subsistence farming is where farmers farm solely for consumption by their own household. Semi-subsistence farming is where a small proportion of the production is traded on the domestic market. Home-production is well developed in the rural parts of ACP-Pacific countries, where on average about 25% of the inhabitants live. In some countries, more than 70% of the population is engaged in semi-subsistence farming to ensure food security. There has been a recent general disengagement in agriculture, especially among young people, contributing to a high migration rate. Recent household surveys carried out in Kiribati, Nauru and Tuvalu showed that the primary motivations for youth migration are employment (37%), education (26%) and climate change (18%).

The extreme isolation of the ACP-Pacific countries creates logistical barriers to efficient fruit and vegetable trade and distribution. Low soil fertility is another key concern, particularly in atoll nations. The Pacific Island region experiences serious environmental challenges, such as extreme weather conditions and rising sea levels, and sociocultural issues, such as land tenure disputes, that reduce productivity and availability of fruit and vegetables. Economic constraints also exist and include high and fluctuating food and energy prices, poorly developed supply chains and infrastructure, and small national economies.

3.2 Factors influencing local production

The local production in the ACP-Pacific countries depends on several factors related to the regional geography and natural resources, as well as climate change. The Pacific region has a tropical marine climate with two seasons. The dry season occurs from December/January to June and the rainy season from July to November/December. However, there is almost no temperature variation between the seasons. This climate is favourable for the production of cash crops such as tea, coffee, cocoa, vanilla, coconut, fruit trees (banana, papaya, mango), and staple crops including cassava, yams, taro, rice, maize, sweet potato, leafy vegetables and pumpkins. Even though the production of most crops is seasonal, the climate allows for production throughout the year.

The morphology of ACP-Pacific countries takes different forms, including islands, islets and archipelagos. Some countries, such as the Cook Islands and the Federated States of Micronesia, are very scattered. The size of these countries also varies widely: while Papua New Guinea and the Solomon Islands have areas of almost 462,840 km² and 28,399 km², respectively, other countries have very limited land surface - the smallest countries included in this study are Tuvalu (26 km²)

and Nauru (21 km²). The limited land area of the ACP-Pacific countries leads to a high population density and is one of the obstacles to agricultural development. For example, the area of fertile land in Nauru is only about 4 km², as the rest of the country's area is used for residential housing. However, some of the bigger ACP-Pacific countries, such as Papua New Guinea, Fiji and Timor-Leste, have large production land surfaces.

Access to fresh water is another obstacle to horticultural production in some ACP-Pacific countries. A typical example is the Cook Islands, where only the island of Rarotonga has an abundant water supply; the rest of the islands suffer from water deficits. Moreover, the soils in some ACP-Pacific countries are calcareous, porous and alkaline, which is a challenge to intensive agriculture with a typical example being Kiribati. Other soils have been subjected to unsustainable use of pesticides and other agrochemicals.

Climate change heavily impacts agricultural production, as seawater invades the groundwater of some low-lying ACP-Pacific countries. Kiribati and Tuvalu both experience this phenomenon. High tides also bring salt to the coastal zone and adjacent areas (via inundation and spray) and make the affected soil infertile.



3.3 Main producing countries in the ACP-Pacific

The production of fruit, vegetables and spices in ACP-Pacific countries was dominated by Papua New Guinea in 2018, with more than 75% of the region's total production (Figure 3). Other important producing countries of fruit, vegetables and spices are Fiji, Vanuatu and Solomon Islands, which account for 11% of the land mass and 15% of the population of the ACP-Pacific, which benefit from rich and fertile soil, access to abundant natural resources and a large work force.

The shares in vegetable, fruit and spice production for the other ACP-Pacific countries remain very small, if not non-existent. Fruit production in the ACP-Pacific countries seems to be strongly correlated with population. This to some extent suggests that production is more focused on the domestic market, with Fiji as an exception, as it tends to have more diversified agriculture.

Figure 3: Annual production of fruit and vegetables for the top 4 ACP-Pacific countries, in tonnes (2018) (Source: COLEACP based on FAOSTAT, 2021)

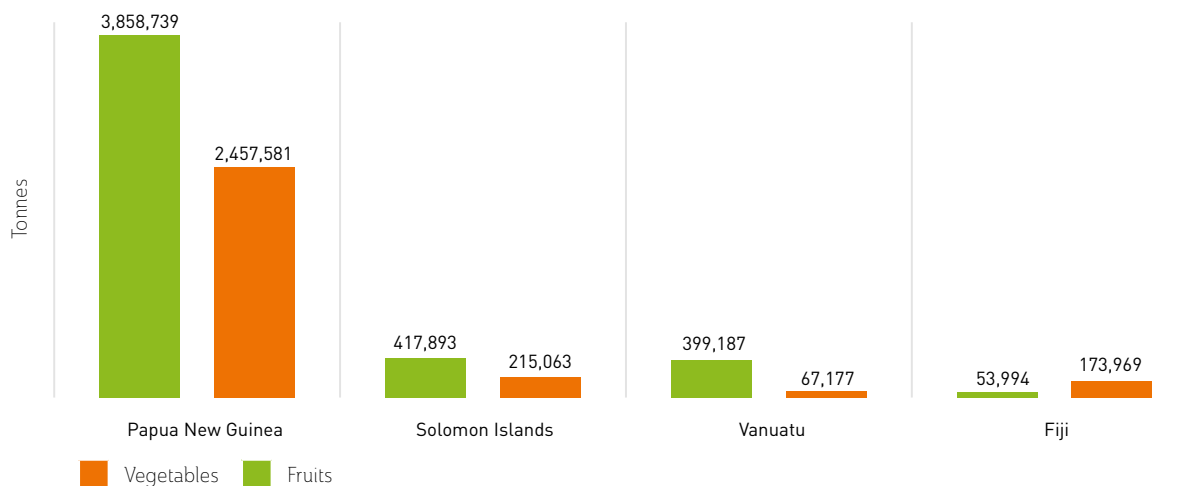


Figure 4: Major vegetable producing ACP-Pacific countries, volume shares of total accumulated production (3,171,741 tonnes in 2018) [Source: COLEACP based on FAOSTAT, 2021]

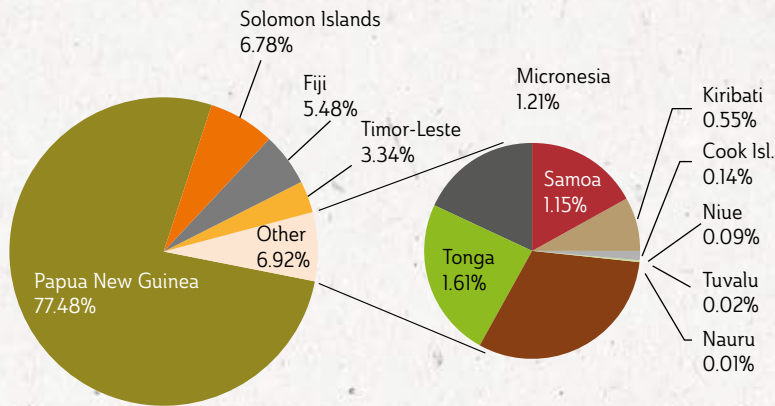


Figure 5: Major fruit producing ACP-Pacific countries, volume shares of total accumulated production (5,665,237 tonnes in 2018) [Source: COLEACP based on FAOSTAT, 2021]

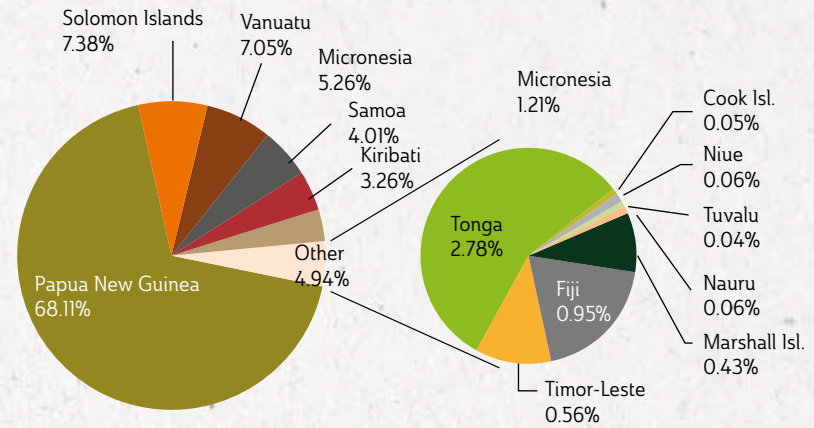
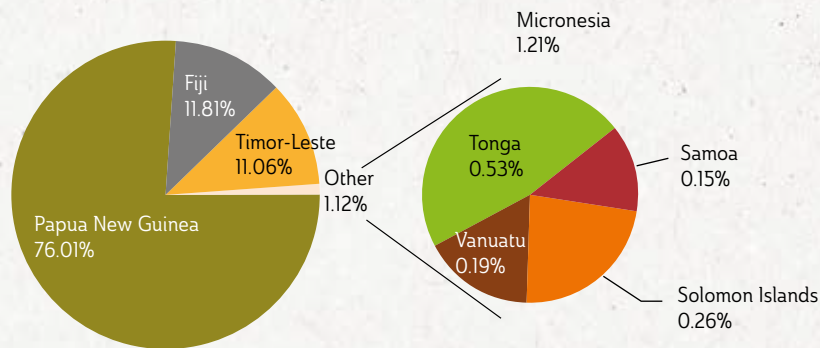


Figure 6: Major spice producing ACP-Pacific countries, volume shares of total accumulated production (84,787 tonnes in 2018) [Source: COLEACP based on FAOSTAT, 2021]



3.4 Main crops grown (fruit, vegetables and spices)

Horticultural commodities produced in ACP-Pacific countries are fragmented. While there are several important vegetables in terms of production volumes, fruit production is dominated by coconut. Spices are also an important production sector, especially ginger, even though their production volumes are smaller than the fruit and vegetables. Due to the small production volumes of spices, their selling prices are generally attractive. Vanilla for example, is the second most expensive spice in the world.

3.4.1 Vegetables

The 10 most produced vegetables in the ACP-Pacific countries in order of production volume are sweet potato; ethnic roots and tubers; yams; taro (cocoyam); cassava; maize (green); pumpkins, squash and gourds (classified together); other pulses; and cabbage and other brassicas (classified together).

Roots and tubers were the most produced vegetables in 2018, with production volumes rising, except for taro (Figure 7). Ethnic vegetables follow with relatively strong growth. Pulses production increased the most among the top 10 vegetable products (Table 2). (For explanations of the commodity category names, see section 2.2 Data collection and processing.)

Table 2: Vegetable production and growth rate in ACP-Pacific countries (2008–2018)

Top 10 vegetables, roots and tubers	Production 2018 (tonnes)	Total growth (2008–2018)
Sweet potato	853,146	22.1%
Ethnic roots and tubers	442,194	14.8%
Yams	438,295	21.9%
Taro (cocoyam)	401,599	-2.7%
Ethnic vegetables	394,007	16.0%
Cassava	245,073	8.0%
Maize, green	241,619	5.0%
Pumpkins, squash and gourds	23,022	11.2%
Pulses, other	12,351	67.1%
Cabbage and other brassicas*	1,384	15.5%

Source: COLEACP based on FAOSTAT (2021).

* 2017 data.



3.4.2 Roots and tubers

Roots and tubers are the dominant staple crops in the ACP-Pacific countries. The most important ones in terms of volume being sweet potato, cassava, taro and yams (Figure 7). Papua New Guinea is the largest producer of all these crops, generating 77% of ACP-Pacific production in 2018. While the production of most roots and tubers is relatively stable, sweet potato production is increasing, entirely driven by Papua New Guinea. According to FAOSTAT (2021), in 2018, sweet potato represented 35% of all root and tuber production. The three main producing countries increased their production over the last decade: Papua New Guinea by 23%, Solomon Islands by 13% and Fiji by 85%. The Fijian production of sweet potato, even

though still relatively small, almost doubled (from 4,600 tonnes in 2008 to 8,500 tonnes in 2018).

3.4.3 Fresh ethnic vegetables

Among the major fresh ethnic vegetables produced in the ACP-Pacific countries are aibika and the leaves of taro, cassava, pumpkin and sweet potato. Although the production of fresh ethnic vegetables is evident in almost all the ACP-Pacific countries, Papua New Guinea again is the largest producer in the region, accounting for 77% (325,000 tonnes) of all regional fresh ethnic vegetable production in 2018. Production increased in all the ACP-Pacific countries except Solomon Islands and Kiribati, where very slight decreases were observed between 2008 and 2018.

Green leaves are an important part of these fresh ethnic vegetables, as their consumption has been promoted by various programmes and organisations in recent years. For example, the inhabitants of Papua New Guinea and Solomon Islands have included aibika (slippery cabbage), a leaf that resembles spinach, in high quantities in their daily food consumption. Other ethnic leafy vegetables include sweet fern, ofengas, bean leaves, sweet potato leaves, taro leaves, cassava leaves and pumpkin leaves.

3.4.4 Beans and other pulses

The production of pulses is mainly limited to Timor-Leste, Solomon Islands, Papua New Guinea and Fiji, in that order of importance (Figure 8). The productions of Solomon Islands and Papua New Guinea remained relatively stable between 2008 and 2018. The production volume of beans and other pulses in Fiji followed an irregular trend: production in volume fell in 2012, but saw a new peak in 2014 and has remained fairly stable since 2016.

The volume of production in Timor-Leste is much higher than the combined volume of other producing countries. For example Timor-Leste produces 99% of the total green and dry beans produced in all the ACP-Pacific countries. Production of beans increased by 47% between 2008 and 2018, but irregularly until 2017 when it increased rapidly.

Other notable pulses are mainly produced in Solomon Islands. In 2018, the country produced 55% of the total regional production. Other countries with significant production are Papua New Guinea (30%) and Fiji (15%). The production of other pulses increased sharply between 2008 and 2018, especially in Fiji where it increased 20-fold.

Figure 7: Cumulative production trends for root and tuber crops in the ACP-Pacific countries (2008–2018) (Source: COLEACP based on FAOSTAT, 2021)

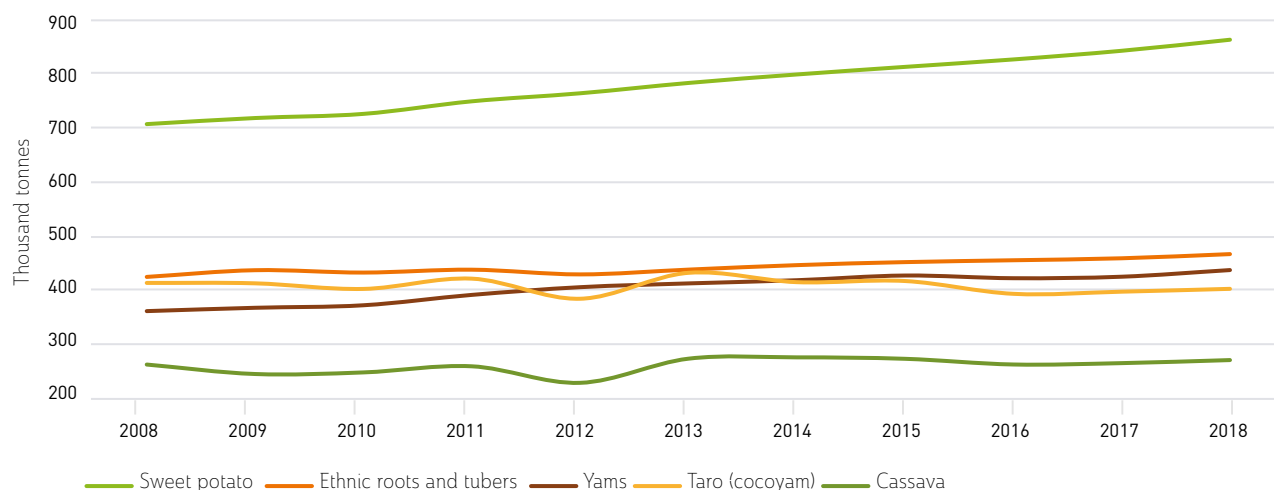
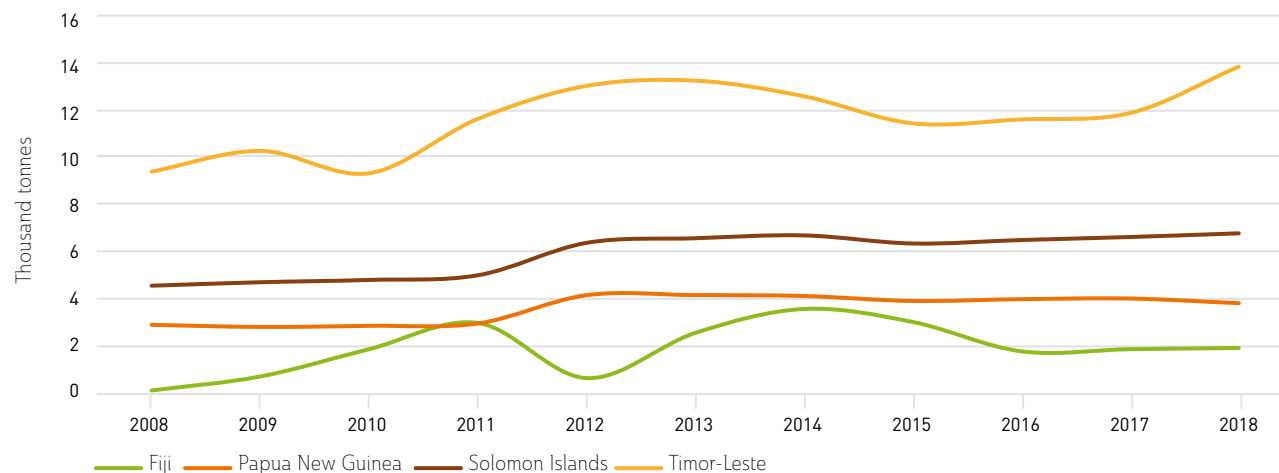


Figure 8: Production trends for pulses in the ACP-Pacific countries (2008–2018) (Source: COLEACP based on FAOSTAT, 2021)



3.4.5 Fruit and nuts

Production of fruit and nuts in the ACP-Pacific countries mainly focuses on coconut (Table 3). Coconut production was stable during the decade studied. Other fruit and nuts produced in significant quantities are bananas, ethnic fruit, ethnic berries, pineapple, watermelon, plantains, papaya and groundnut.

Production of bananas, watermelon and ethnic fresh fruit saw significant growth between 2008 and 2018. The most notable growth in production was seen in watermelon, which almost tripled (181.3%) within the decade. The volume of production of watermelon is, however, limited when compared to the major fruit of coconut, bananas and ethnic fresh fruit.

Bananas are the second most-produced fruit by volume and also have the second biggest production growth of 41%. This growth is mainly driven by the

production in Papua New Guinea. Ethnic fresh fruit and groundnut also saw remarkable production growth between 2008 and 2018. Conversely, papaya and plantains saw production shrinkages of 38.3% and 18.2%, respectively, between 2008 and 2018.

Table 3: Fruit and nut production and growth rates in ACP-Pacific countries (2008–2018)

Top 10 fruit and nuts	Production 2018 (tonnes)	Total growth [2008–2018]
Coconut	2,820,333	0.1%
Bananas	1,447,967	41.0%
Ethnic fruit	1,175,790	19.5%
Ethnic berries	107,699	2.6%
Pineapple	33,735	8.3%
Watermelon	8,385	181.3%
Plantains and others*	2,676	-18.2%
Papaya	7,286	-38.3%
Ethnic nuts	6,709	3.1%
Groundnut	5,397	14.6%

Source: COLEACP based on FAOSTAT (2021).

* Based on 2017 data.

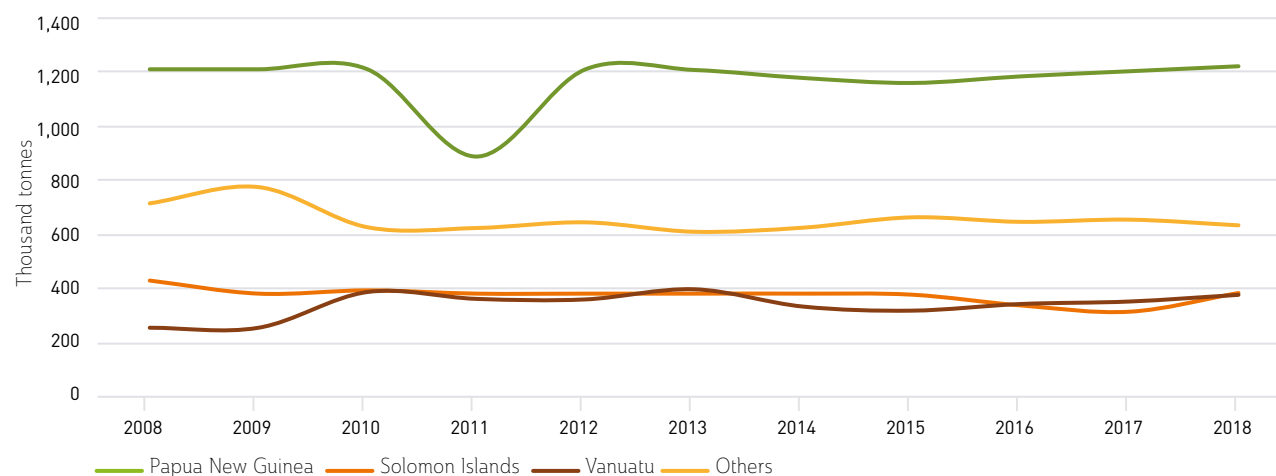
3.4.5.1 Coconut

Coconut is a palm that is present all over the Pacific islands. It is called “the tree of life” because it grows abundantly in the humid, tropical coastal climates of the Pacific islands and tolerates some exposure to saltwater. Coconut is also resilient to cyclonic wind and can produce fruit regularly for more than 70 years. The largest production of coconuts in the Pacific in terms of volume is located in Papua New Guinea, which produced 47% of the total production in the ACP-Pacific countries in 2018. Other countries with significant production are Solomon Islands (15%) and Vanuatu (14%). Coconut production remained stable over the decade of study (Figure 9).

It is, however, projected that coconut production in the Pacific might decrease. This is because most of the coconut trees were planted during the colonial period. The ageing trees are not being replaced, leading to a decrease in coconut population, coupled with the decrease in yields of the ageing trees. It may take at least six years for newly planted coconut to reach economic bearing level. The increasing number of cyclones and other natural disasters is compounding the situation.

Coconut trees are at the front line of climate change, especially those that grow in coastal areas. Climate change threatens coconut biodiversity in both the short and medium terms. The rise in sea level poses a threat in the medium term, while the increasing soil salinisation directly affects the coconut trees and plantations. The frequent super-high tides contribute to the increase in salinity and coconut trees can only grow in slightly saline soils.

Figure 9: Coconut production in ACP-Pacific countries (2008–2018) (Source: COLEACP based on FAOSTAT, 2021)





3.4.5.2 Copra

Copra is dried coconut flesh and is produced from the coconut after an intensive transformation process such as drying, refining, bleaching and deodorising. The process requires large-scale, energy-intensive and expensive equipment. Almost all the ACP-Pacific countries produce copra and together supply half of the global copra trade. Papua New Guinea and Vanuatu are the two largest copra exporters in the world. However, the local production has been declining in recent years. Factors identified as contributing to the decline include the low value of the product, replacement by other more lucrative business opportunities for younger generations and the impact of climate change on coconut plantations that also affects copra production.

3.4.5.3 Virgin coconut oil

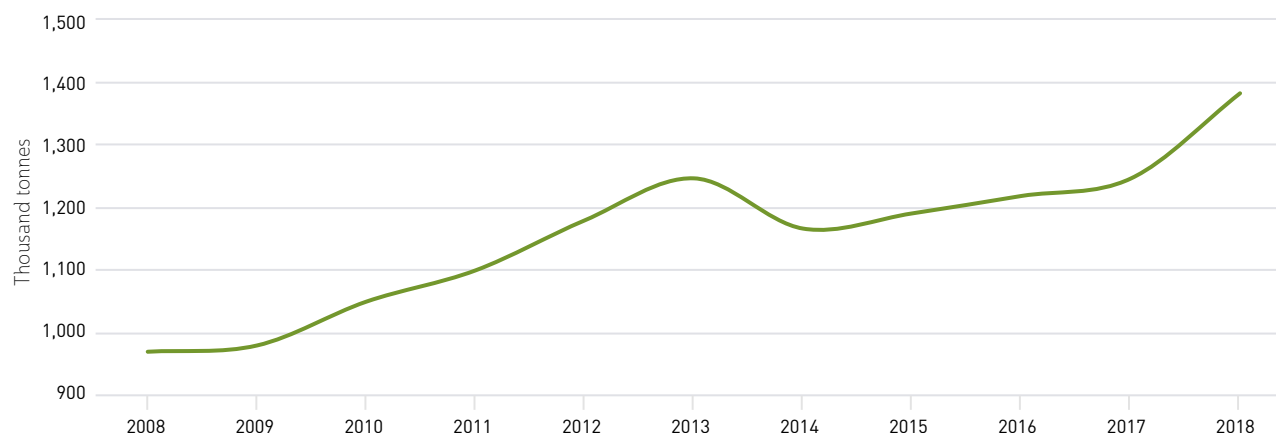
Conventional coconut oil is produced from the first pressing of the copra. The ACP-Pacific countries mostly produce virgin coconut oil by using the direct micro expelling (DME) method instead of a centrifuge or separation process. This production requires more processing, as the oil is extracted from the fresh fruit through a cold-press process.

This product is a niche commodity from the Pacific and is exported to several countries. In the region, there is a growing movement towards the production of organic virgin coconut oil. Product testing and certifications remain a challenge, however.

3.4.5.4 Bananas

Banana production strongly increased in all the ACP-Pacific countries during the second half of the study period, except for Samoa where a negative trend was observed. Papua New Guinea remains the main producer and accounted for 96% of the total banana produced in the ACP-Pacific countries in 2018. The remaining 4% of production was spread over the other ACP-Pacific countries, with Samoa, Vanuatu and Micronesia being other recognised producers.

Figure 10: Trend in banana production in Papua New Guinea (2008–2018) (Source: COLEACP based on FAOSTAT, 2021)



3.4.5.5 Pineapple

Pineapple production in the ACP-Pacific countries is slightly increasing. Similar to most local crops, Papua New Guinea is the largest producer of pineapple in the region, producing 68% in 2018. This was followed by Fiji and Samoa, which produced 18% and 14% respectively. The production in Timor-Leste and Cook Islands accounted for very small proportions (0.3% and 0.1%, respectively). Production of pineapple remained stable between 2008 and 2018, except for Fiji where an increase of 71% was observed (Figure 11).

3.4.5.6 Other/ethnic fruit

Ethnic fruit include many locally grown fruit that are produced for household consumption or sold on the domestic markets. Common ethnic fruit in the ACP-Pacific countries include Pacific lychee, golden apple, Malay apple, kona, watery rose apple, breadfruit, durians, jackfruit, soursop, sweet-sop (sugar-apple), bullock's hearts (custard apple), guava, pomelo, fig, bilimbi, star apple, tembus, naranjilla, tamarillo and rukam.

Papua New Guinea produced 95% of the total volume of ethnic fruit, with production steadily increasing by 21% between 2008 and 2018 (Figure 12).

The rest of the production of ethnic fruit is located in Solomon Islands, Samoa, Vanuatu and Fiji. The production in these countries is more stable than in Papua New Guinea. The production of ethnic fruit between 2008 and 2018 slightly decreased in some of the ACP-Pacific countries such as Fiji (-34%) and Vanuatu (-17%).

Figure 11: Pineapple production in ACP-Pacific countries (2008–2018) (Source: COLEACP based on FAOSTAT, 2021)

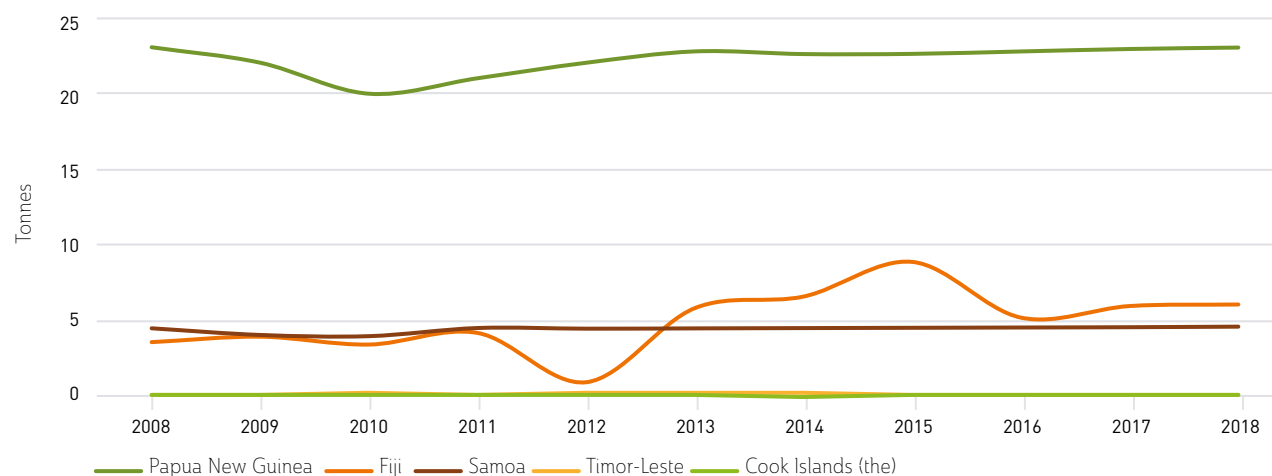


Figure 12: Ethnic fruit production in Papua New Guinea (2008–2018) (Source: COLEACP based on FAOSTAT, 2021)

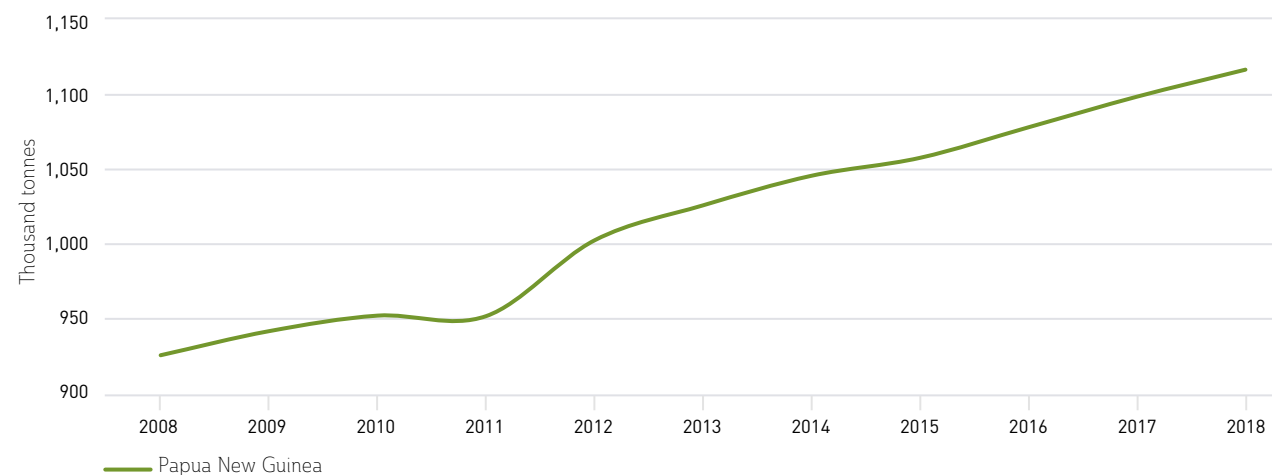
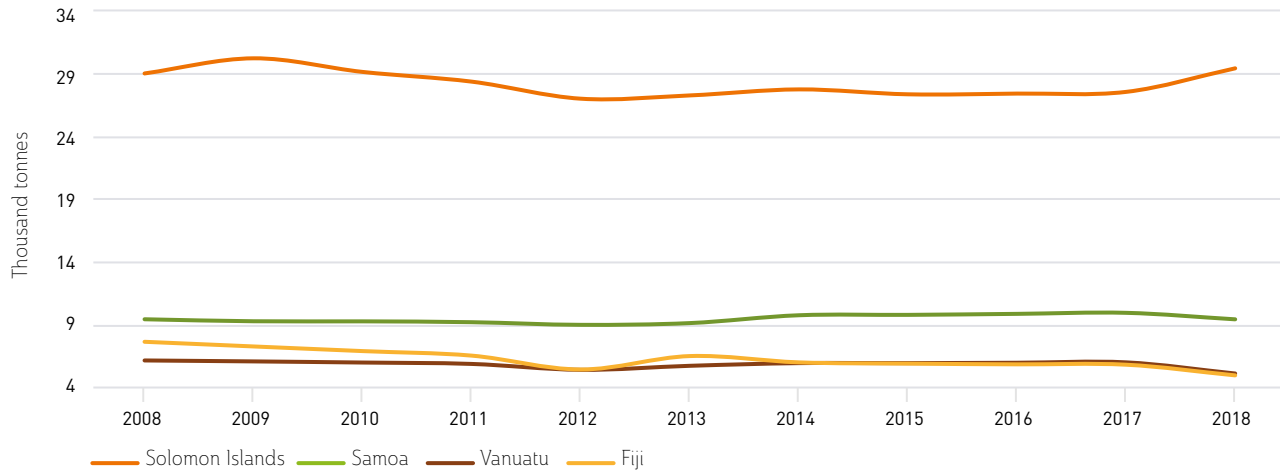


Figure 13: Ethnic fruit production in the 4 main producing ACP-Pacific countries after Papua New Guinea (2008–2018) (Source: COLEACP based on FAOSTAT, 2021)



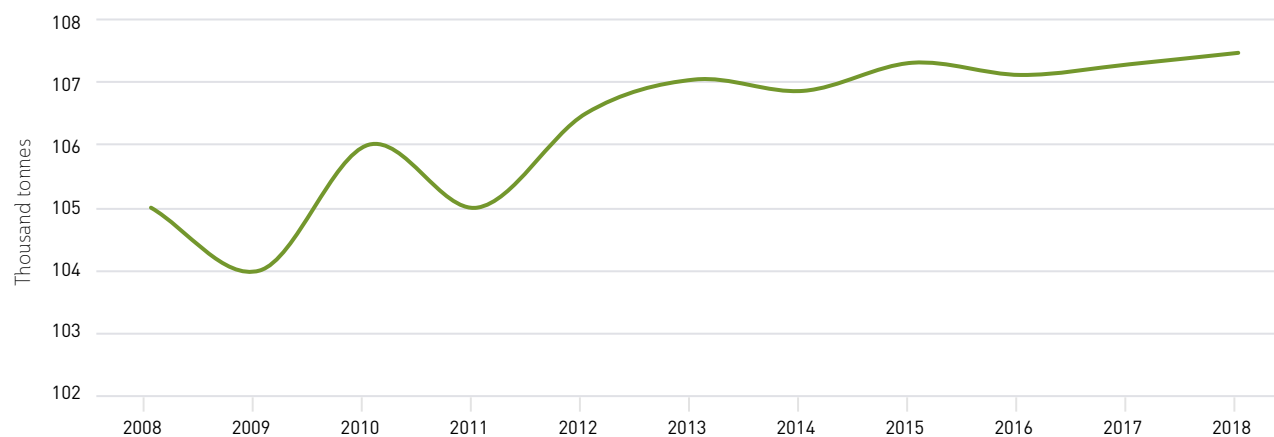
3.4.5.7 Berries and nuts

Berry production in the ACP-Pacific countries is most likely dominated by Papua New Guinea (although there are no production data available for the other ACP-Pacific countries). Their production saw a slight increase of 3% between 2008 and 2017. Common berries produced in the countries includes Cape gooseberry, raspberries, Indian mulberry, lime berry and mulberries. Production of Indian mulberry is especially relevant for the production of noni fruit juice.

The production data on the overall berry production in Papua New Guinea might include other local fruit in the berries group. The data was extracted from FAOSTAT (2021), which does not specify which species of berries are covered. Thus, this production data might also include the very common local taun fruit (matoa), as well as betel (areca) nut (locally called buai). Both are sometimes considered as berries. As far back as 1996, betel nut production in Papua New Guinea was estimated to be 49,000 tonnes per year. More generally, betel nut is estimated to be the fourth largest fruit produced in the ACP-Pacific countries.



Figure 14: Trend in other berries production in Papua New Guinea (2008–2017) (Source: COLEACP based on FAOSTAT, 2021)



A similar trend to that seen in the production of berries was also seen in the production of “other nuts”. The category of “other nuts” is most likely to include many kinds of local nuts estimated to be over 40 species. Among them are: galip nut, karuka (Pandanus), okari (alita fasia), kat nut, ailali, Ngali nut, suga/lenge, coastal/sea almond, finschia nuts, water chestnut, Nypa nut, salak and candle nut.

It is important to take note of the fact that the differentiation between “other nuts” and berries is not always clear. Papua New Guinea produces approximately 90% of the “other nuts” produced in the ACP-Pacific countries by volume. Its production amounted to 5,600 tonnes in 2018. Other smaller nut-producing countries are Solomon Islands, Kiribati and the Federated States of Micronesia.

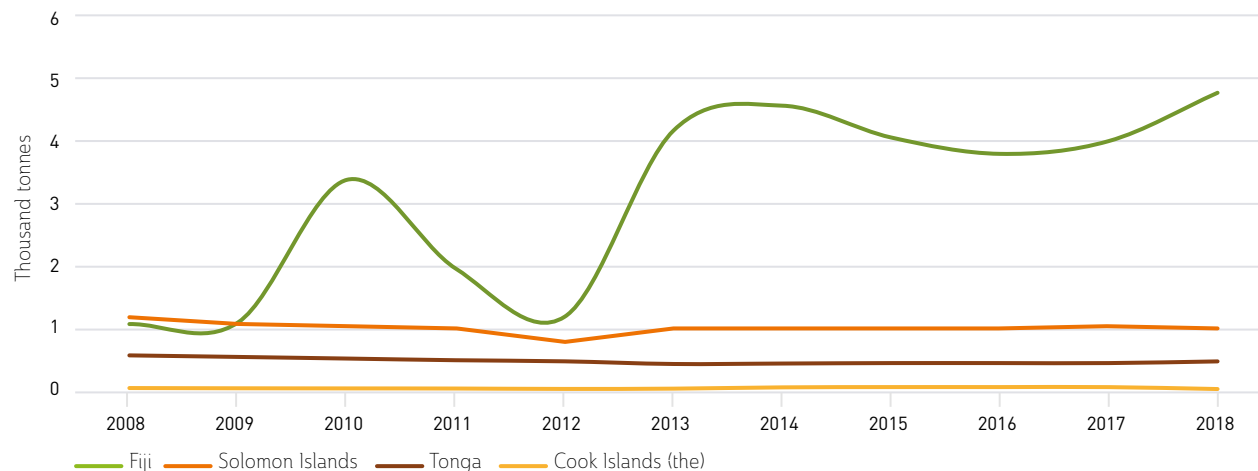


3.4.5.8 Watermelon

The main watermelon producing ACP-Pacific countries are Fiji, Solomon Islands, Tonga and Cook Islands. Over the decade covered by the study, watermelon production remained stable in Solomon Islands, Tonga and Cook Islands, but increased in Fiji, the only country that had seen increase, with production tripled between 2008 and 2018. In 2018, Fiji produced almost 4,800 tonnes of watermelon, representing 75% of the total production in the ACP-Pacific.

Before COVID-19, the Fijian market for watermelon was still reported to be booming. Four varieties of watermelon are produced in Fiji, namely Farmers Giant, Charleston Grey, Sugar Baby and Sugar Delicata.

Figure 15: Watermelon production in ACP-Pacific countries (2008–2018) (Source: COLEACP based on FAOSTAT, 2021)



3.4.6 Spices

Spices are another important sector of the horticultural production in ACP-Pacific countries. Common spices produced include vanilla, pepper (*P. nigrum*), nutmeg, turmeric, mace and cardamoms (combined), chillies and capsicums (dry). The spices sector is, however, dominated both in production volume and growth by ginger, which experienced explosive growth of more than 300% between 2008 and 2018. Again, due to its much larger territory, Papua New Guinea dominates spices production and thus has great influence on the trends presented below. Apart from ginger, there was also an explosive growth in production of turmeric. Fijian turmeric, for example, is in high demand in the United States of America (USA) including for value-added products (along with ginger). The high demand for ginger and turmeric is related to the increased awareness surrounding healthy products and natural remedies for wellness. As no specific production data for turmeric could be found, it is included in the category “Spices, other”. The evolution of this group’s production stands in contrast to the trend for turmeric, as reported in the literature and by local contacts, and has actually seen a shrink in production. The other (named) spices also show negative growth trends in terms of production (as reported by FAOSTAT, 2021). The breakdown of spices production in the ACP-Pacific countries is shown in Table 4.

Table 4: Production of spices and growth rate in ACP-Pacific countries (2008–2018)

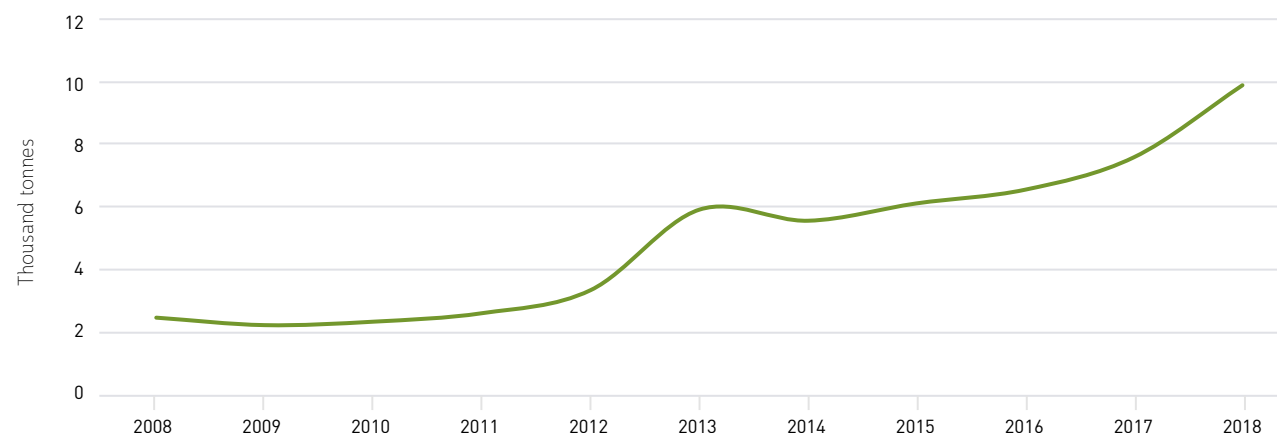
Spice	Production 2018 [tonnes]	Total growth [2008–2018]
Ginger	9,894	304.2%
Spices, other	1,004	-2.7%
Vanilla	675	-6.9%
Pepper (<i>Piper nigrum</i>)	113	-33.5%
Nutmeg, mace and cardamoms (combined)	91	-32.6%
Chillies and Capsicums (dry)	4	-50.0%

Source: COLEACP based on FAOSTAT (2021).

3.4.6.1 Ginger

Fiji is the largest producer of ginger in the ACP-Pacific. Production of the crop is booming and tripled between 2008 and 2018, thanks to increase in international demand. The annual production for 2018 was over 9,900 tonnes. Ginger produced in Fiji is recognised as a premium grade product, as the crop is grown in an unpolluted environment to give it rare superior quality. The growth path of ginger production in Fiji between 2008 and 2018 is shown in Figure 16.

Figure 16: Ginger production in Fiji (2008–2018) [Source: COLEACP based on FAOSTAT, 2021]



3.4.6.2 Vanilla

Vanilla is produced in small quantities in most ACP-Pacific countries. However, it is only Papua New Guinea and Tonga that currently produce it in significant quantities. Papua New Guinea is the largest producer in the ACP-Pacific with a total production of 493 tonnes in 2018. This represents 73% of the total regional production. Vanilla from Papua New Guinea accounted for approximately 10% of the global production in 2018. After a drop in vanilla production by Papua New Guinea after 2008, it picked up gradually and has been relatively stable since 2015 (Figure 17).

Tonga is the second largest producer of vanilla in the region with 182 tonnes (27% of the regional total) in 2018. However, Tongan production of vanilla is threatened by the increasing number of cyclones which are destroying the plantations.

3.4.7 Conclusion

Comparing the three major production sectors – vegetables, fruit and spices – it can be deduced that the impressive production growth of ginger and turmeric (even if the latter is not detailed because of lack of available data) has strongly influenced the production volume of spices in the ACP-Pacific countries. The overall level of production of spices was the most dynamic between 2008 and 2018, while that of fruit and vegetables remained relatively stable during the same period. However, the peak of fruit production observed in 2018 could be a new emerging trend. This needs to be observed for a few years before a valid conclusion can be drawn. A summary of the performance of the three sectors are shown in Figure 18.

Figure 17: Vanilla production in Papua New Guinea and Tonga (2008–2018) (Source: COLEACP based on FAOSTAT, 2021)

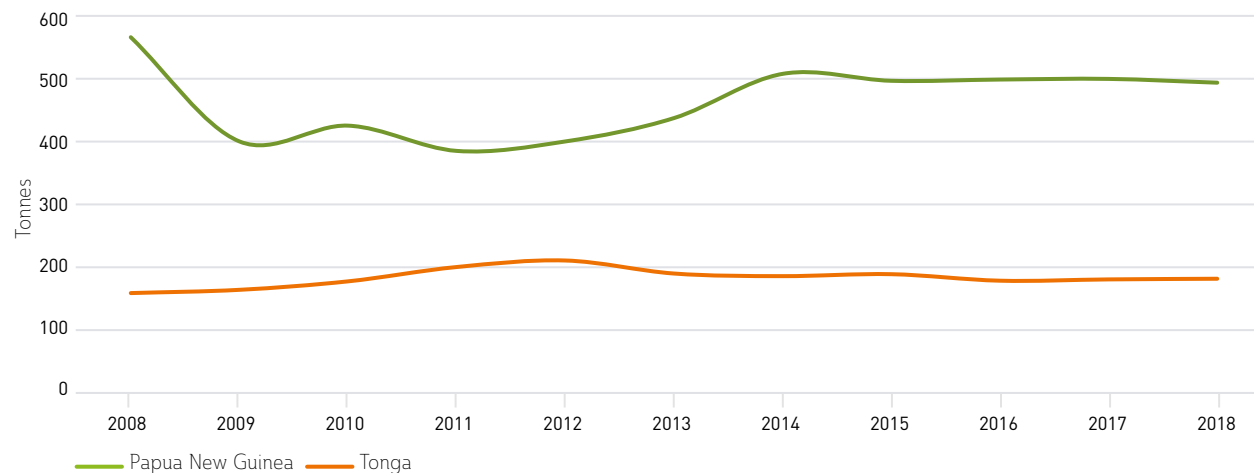
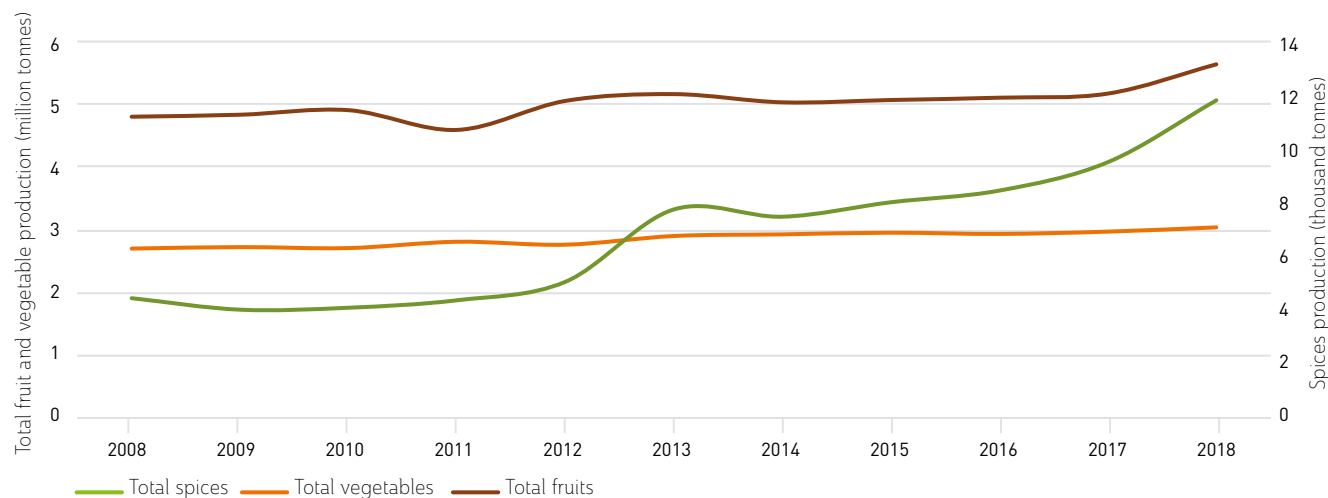


Figure 18: Comparative trends for vegetable, fruit and spice production within the ACP-Pacific countries (2008–2018) (Source: COLEACP based on FAOSTAT, 2021)



3.5 Positioning ACP-Pacific countries to compete with other suppliers

Opportunities exist for ACP-Pacific countries to compete favourably in the supply of crops from the three production segments for the domestic, regional and international markets. Most notably, roots and tubers: sweet potato, yams and taro are among the most important vegetables produced in the ACP-Pacific countries.

Overall, total production of roots and tubers (excluding sweet potato) places the region among the top 10 producers globally. This large production of roots and tubers supplies both local demand (a major market for this type of vegetable) and regional demand. Indeed, a significant proportion of the roots and tubers imported by Australia and New Zealand originates from the ACP-Pacific countries, with Fiji, Tonga and Samoa being the main exporters, because of the significant diaspora communities.

Exports of roots and tubers from ACP-Pacific countries are, however, principally limited to the regional market and account for only a small proportion to the international market. Freight

costs are prohibitive compared to the value of such commodities. For example, the US market imports only 1% of root and tuber products from the ACP-Pacific. The countries could position themselves to expand their shares in these markets, for example by targeting some of the niche markets such as organic produce.

In the case of fruit exports, ACP-Pacific countries are globally less competitive, simply because they have low comparative advantages compared with other producing and competitive countries in other regions. They also have limited production. However, coconut is an exception as there is a very high level of production, although the trend shows production is slowly declining for both the fresh nuts and copra. For copra, ACP-Pacific countries are the world's largest producer and supply about 50% of global demand, mainly from Papua New Guinea, Solomon Islands and Vanuatu. In terms of exports, New Zealand is a major trading partner for coconuts, as to a lesser extent is Australia. In addition to Papua New Guinea and other well-known coconut--producing ACP-Pacific countries, other notable producing and exporting countries of coconuts are Samoa and Tonga. More generally, exporting fresh fruit is a challenge due to biosecurity issues. The

Pacific Horticultural and Agricultural Market Access Plus Programme (PHAMA Plus) in the Pacific aims to resolve these biosecurity issues (PHAMA Plus, 2021). Tonga is now exporting watermelon and Samoa exporting bananas to New Zealand.

ACP-Pacific countries are also competitive for spices, especially in the production and export of vanilla. This spice is a very important product for the Pacific region: if the production of all the ACP-Pacific countries is aggregated, they ranked as the fourth largest producer in the world, behind Madagascar, Indonesia and China. The majority of vanilla produced by ACP-Pacific countries is exported to the regional market, with New Zealand and Australian markets dominating, as they import 48% and 36% respectively of ACP-Pacific countries' vanilla production. These trade flows are mainly for vanilla beans, which are processed in the importing countries and then sold on the international market. Papua New Guinea and Tonga are the main exporters of vanilla in the region. However, the share of ACP-Pacific countries' export of vanilla directly to the international markets remains limited, accounting for only 1% and 4% of vanilla imported by the American and European markets respectively.



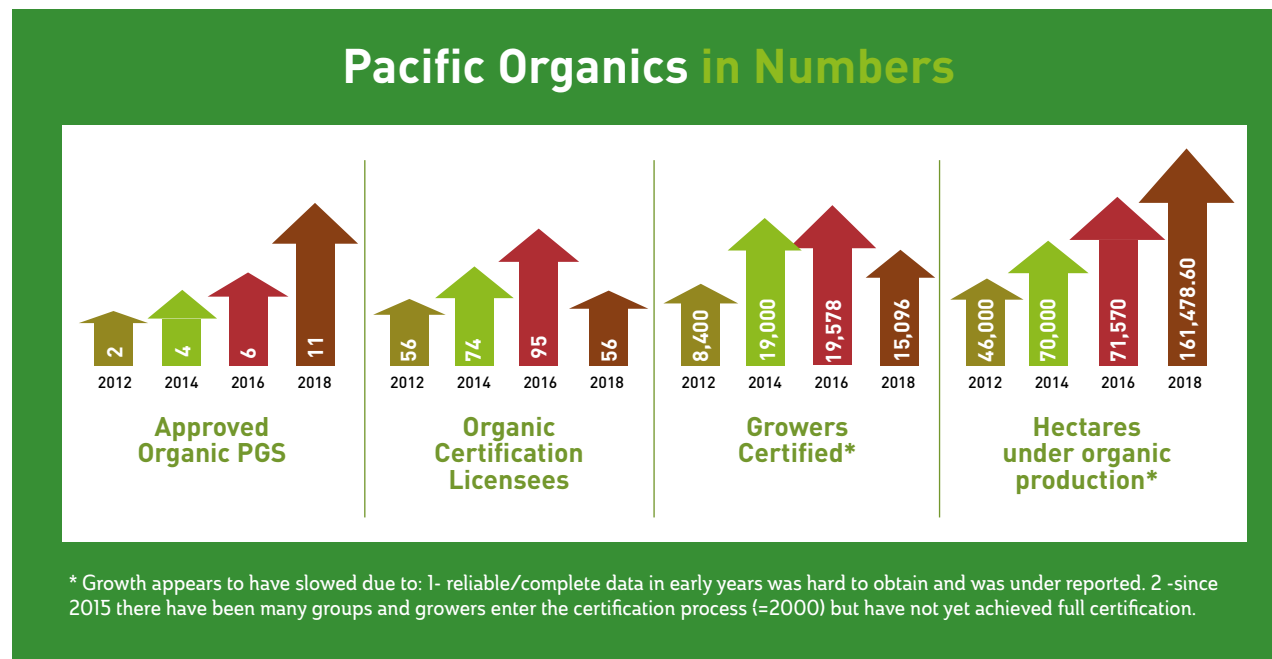
3.5.1 Development of organic agriculture

Organic agriculture in eight ACP-Pacific countries currently meets the European organic and certification requirements. These countries are Papua New Guinea, Solomon Islands, Vanuatu, Fiji, Tonga, Cook Islands, Samoa and Niue. However, there is a general trend of growth in both the area under organic production and the number of farmers certified for organic products in ACP countries. Currently, Papua New Guinea is the largest ACP-Pacific organic producer (understood here in the light of European legislation), and Cook Islands the smallest.

Figure 19 shows the trends in organic land area and number of organic certifications as of October 2020. The growth of organic agriculture in the ACP-Pacific is strongly supported by governmental and institutional initiatives. This is because it provides opportunities for the export of high-value, low-volume products to niche markets to enhance economic production, improve quality of production and meet the traceability requirements of the international markets.

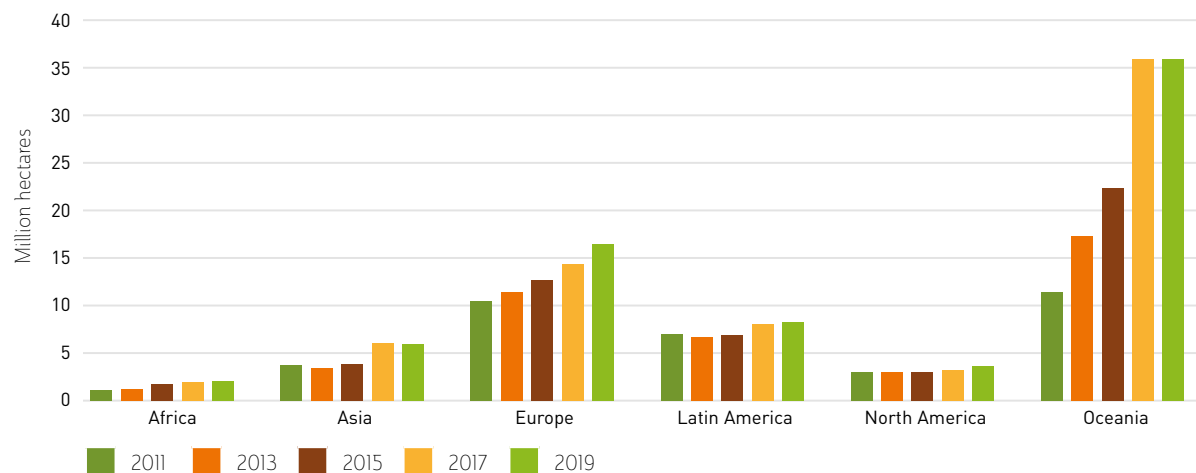
Most of the ACP-Pacific countries are affected by climate change, which is contributing to worsening food security, especially in the developing countries of the region. Local governments and international organisations such as FAO and the Pacific Organic & Ethical Trade Community (POETCom) are working towards achieving climate resilient agriculture and improving food self-sufficiency in these countries. Some of the steps being taken include promoting organic agriculture and establishing standards, as this contributes significantly to sustainable production. It also contributes to mitigating climate change effects and adding value to products. Moreover, adaptation to climate change offers an

Figure 19: Trends in organic land size and number of certified farmers in the Pacific region (Source: Alliances for Action and Partners, 2020)



opportunity to simultaneously tackle challenges brought by nutrition and healthy lifestyles. ACP-Pacific countries such as Niue and Vanuatu aimed at converting all their agriculture lands to organic by 2020 (the goal was not achieved but progress was made in this direction). This approach is similar to what was initiated by the Fijian island of Cicia, which has changed all its agricultural land to organic since 2014.

Figure 20: Evolution of organic agricultural land in the world (Source: FiBL-IFOAM-SOEL surveys 2012 - 2021)



The ACP-Pacific countries are one of the regions identified with the highest growth rate in organic production in terms of land surface area. The organic land in Oceania increased almost fivefold between 2000 and 2017 and accounted for half of the world's organic agricultural land in 2017. This strong evolution is largely attributed to the agricultural changes in Australia.

Australia has the largest organic agricultural land area in Oceania; however, Samoa has the highest organic share (37.6% of its total agricultural land compared with 8.8% of that of Australia in 2017).

The share of the organic agricultural land area varies among the ACP-Pacific countries. Samoa has the strongest organic agricultural growth rate in Oceania, reaching almost 68% in 2017 (with the addition of 43,000 hectares over that of 2016), due to the revival in organic coconut production. The growth of Vanuatu organic agricultural land

increased by 26.2% in 2017 with 3,000 hectares more than in 2016. By contrast, Niue and Tonga have almost no organic agriculture.

Almost all the organic areas in Oceania are permanent grasslands making up nearly 97% of the total organic area of the region in 2017. This is mostly due to the large areas available for agriculture in Australia.

The trend in organic land use is, however, different in the ACP-Pacific countries, as their land surface is much smaller. Thus, organic agriculture in the ACP-Pacific countries is primarily under permanent crops. Coconut is the largest organically grown commodity, accounting for 135,000 hectares or 25% of the total regional coconut plantations in 2017. Organic coffee also had a significant share (14,000 ha) in the ACP-Pacific countries in 2017. The area under organic agriculture in the various ACP-Pacific countries in 2018 is shown in Table 5.



Table 5: Organic agricultural land in ACP-Pacific countries (2018)

Rank in terms of land area	Cultural group and ACP-Pacific countries	Total land area (km ²)	Organic agricultural land as percentage of total arable land area
Melanesia			
1	Papua New Guinea	462,840	4.17
2	Solomon Islands	30,407	4.03
3	Fiji	18,273	9.68
4	Timor-Leste	14,874	15.73
5	Vanuatu	12,281	13.72
Polynesia			
6	Samoa	2,785	36.59
8	Federated States of Micronesia	701	N/A
9	Tonga	650	1.94
11	Niue	261	0.86
12	Cook Islands	237	1.60
14	Tuvalu	26	N/A
Micronesia			
7	Kiribati	811	4.71
10	Palau	444	N/A
13	Marshall Islands	181	N/A
15	Nauru	21	N/A

Source: FiBL (2021).

N/A: Data not available.

Production of organic fruit and vegetables in the ACP-Pacific countries is limited and fragmented.

Some countries - such as Samoa, Fiji and, to a lesser extent, Niue and Vanuatu - have a diversified organic production. By contrast, other countries, including Cook Islands, Solomon Islands and Tonga, currently only produce specific organic crop(s). Coconut and virgin coconut oil are common organic products because the growing conditions of coconut trees in the ACP-Pacific countries naturally meet organic requirements. A summary of the production is shown in Table 6.

While Table 6 could lead to the conclusion that organic agriculture is of limited scope in the ACP-Pacific countries, one has to keep in mind that it is a new agricultural sector for the region. Even though agriculture in the ACP-Pacific countries still, to some extent, follows traditional and natural methods, the certified organic process is at an early stage. Following the global organic trend, organic fruit and vegetable production in the ACP-Pacific countries is expected to grow in the coming years. This development is an opportunity, especially for countries with diverse soil resources such as Papua New Guinea.

Table 6: Production of organic fruit and vegetables in ACP-Pacific countries (2018)

Organic commodity producer	Fruit and fruit juices	Vanilla	Ginger	Bananas	Noni	Vegetables	Herbs and spices	Virgin coconut oil
Cook Islands	✓				✓	✓		
Fiji	✓	✓	✓	✓	✓		✓	✓
Niue		✓	✓		✓			✓
Papua New Guinea	✓			✓		✓	✓	
Samoa	✓	✓	✓	✓	✓	✓	✓	✓
Solomon Island								✓
Tonga								✓
Vanuatu		✓	✓				✓	✓

3.6 A production dominated by roots, tubers and coconuts

The local production of horticultural products in the ACP-Pacific countries depends on several factors related to regional geography, natural resources and climate change. The limited land area, inadequate access to fresh water, high migration rate, porous soil, climate change and high population density of the ACP-Pacific countries are obstacles to agricultural development. In 2018, the ACP-Pacific countries' production of fruit, vegetables and spices was dominated by Papua New Guinea, followed by Solomon Islands, Vanuatu and Micronesia. Fiji is an exception, as it tends to have more diversified agriculture.

Horticultural commodities in the ACP-Pacific countries are fragmented. While there are several important vegetables in terms of production volumes, fruit production is dominated by coconut and spices dominated by ginger and vanilla. Roots and tubers were the most produced vegetables in

the ACP-Pacific countries in 2018. Their production volumes are still rising, except for taro. Ethnic vegetables enjoyed relatively strong growth, but pulses production increased the most among the top 10 vegetable products.

Papua New Guinea is the largest producer of ethnic fresh vegetables in the region. Fresh ethnic vegetable production increased in almost all ACP-Pacific countries, except Solomon Islands and Kiribati where a very slight decrease was observed between 2008 and 2018. The production of pulses is mainly limited to Timor-Leste, Solomon Islands, Papua New Guinea and Fiji (in that order of importance).

The ACP-Pacific countries' fruit production focuses on coconuts, which has been stable during the last decade, whereas the production of bananas, watermelon and ethnic fresh fruit saw significant growth between 2008 and 2018. Pacific coconut production might decrease in the future because most of the coconut trees were planted during the colonial period.

The development of organic agriculture is increasing among the ACP-Pacific countries. It is a practice that many have found necessary to offset the devastating effects of climate change, ensure sustainable production and improve marketability of agricultural products in the region. It is seen as an opportunity for the ACP-Pacific countries to increase their chances of getting access to other markets, especially international ones. Organic production is an integral component of strategies to tackle the challenges brought about by nutrition and healthy lifestyles. The visible benefit for the horticultural farmers in ACP-Pacific countries is that it provides opportunities for the export of high-value, low-volume products to niche markets to enhance economic production, improve quality of produce and meet the traceability requirements of international markets.

At the time of carrying out this study, eight ACP-Pacific countries fully met the European organic and certification requirements.





4

IMPORTATION OF HORTICULTURAL PRODUCTS BY ACP-PACIFIC COUNTRIES

4.1 Factors influencing importation

Before discussing in more detail the importation of fruit and vegetables to ACP-Pacific countries, it is important to contextualise the consumption habits of the people, as well as the importance of the tourism sector and its food expectations, both of which influence the importation of fruit and vegetables. The COVID-19 crisis and its impact on imports in the ACP-Pacific islands is also discussed.

4.1.1 Consumption habits

Consumption habits have a great influence on production, importation and exportation in the ACP-Pacific countries. This subsection details the issues of food security and malnutrition, as well as urban and rural consumption habits, as they influence importations.

4.1.1.1 Food security

“Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”¹. The four pillars of food security – availability, access, utilisation and stability – are deficient in some of the ACP-Pacific countries, especially food availability and access, and especially in the smaller islands.

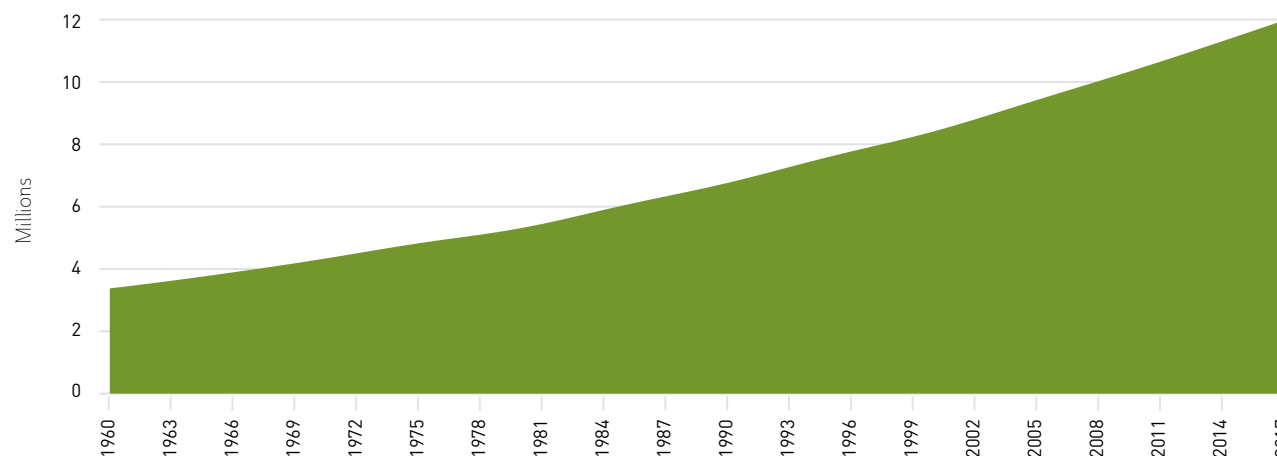
Traditionally, food security has been achieved through sustainable agriculture and fishing practices, relying mostly on traditional food crops. However, the regional food demand started to

increase about 20-25 years ago with the growing population (Figure 21) and urbanisation. Particularly in smaller ACP-Pacific countries, the local agricultural sector has been put under pressure to meet the increasing food demand. At the same time there have been declines in the population engaged in farming and in available agricultural land. Hence, the local food production no longer ensures food security. Furthermore, climate change and increasing natural disasters linked to it constantly threaten the islands. The regional agricultural, forestry and fishery sectors are increasingly impacted by greater land degradation,

deforestation, coastal erosion and rising sea levels. The Pacific region was last affected in April 2020 by Cyclone Harold and current projections suggest that extreme climate events such as this will grow in frequency and intensity in the coming years.

As a result, food security and access to nutritious food for all people has become a major concern for the ACP-Pacific countries. It is one factor that is encouraging these countries to rely, at least in part, on importations to feed people, especially in urban areas; this is occurring to different extents correlated with each country’s size.

Figure 21: Population growth in the ACP-Pacific countries (1960–2017) [Source: World Bank Open Data, 2021]



¹ Definition provided by the UN Committee on World Food Security.

4.1.1.2 Nutrition issues

One of the major health issues of the ACP-Pacific countries is malnutrition and its consequences. Traditionally, ACP-Pacific countries had a diet based on local products such as root crops (notably taro, cassava, yams and sweet potato), leaves, coconut, fruit and fish. However, over time, inhabitants became dependent on food imports, influenced by western diet habits, such as fast food, carbonated drinks, processed food and energy-dense diets. Moreover, as remote islands, import infrastructure increases the prices of goods that are imported, and people turn to cheaper, less-healthy options. This diet has, unfortunately, resulted in high rates of malnutrition, undernutrition, micronutrient deficiency, prevalence of non-communicable diseases (NCD) (such as diabetes and cardiovascular diseases) and obesity among Pacific populations. For example, in 2017, Cook Islands was named as the country with the highest rate of overweight and obesity worldwide.² About 83.9% and 55.3% of the population fit into these categories. The urban population is generally more affected than the rural population, as access to high-calorie processed products is easier compared to rural areas, where subsistence farming allows more access to healthy food.

In this context, prevention of obesity became of paramount concern in the ACP-Pacific countries, necessitating several food programmes to be put in place. The promotion of green leafy vegetables in ACP-Pacific countries was seen as an affordable way to increase vegetable intake and contribute to addressing issues of nutrition, as well as encouraging consumption of locally produced

fruit and vegetables, and therefore decrease importations.

4.1.1.3 Consumption habits for fruit and vegetables

Unfortunately, fruit and vegetables were not seriously regarded as part of ACP-Pacific populations' main food consumption, as only 102 grams of fruit and vegetables were consumed per capita per day.³ People tend to consume more processed meats and other imported products than fruit and vegetables.

The ACP-Pacific population also tends to spend more money on food other than fruit and vegetables, such as meat and bread. This is explained in the rural areas by the fact that subsistence farming is used a lot: people home produce most of the fruit and vegetables that they consume. For example, home production in Cook Islands covers about 67% of the fruit and 33% of the vegetables consumed. The trend is similar in Tuvalu, where the rural population produces all of the fruit and most of the vegetables required for consumption. But in urban areas, only half of the fruit and very little of the vegetables required for consumption are produced locally.

Therefore, this is another factor increasing trade imbalance.

FAO and the World Health Organization (WHO) led the global initiative "Promotion of Fruit and Vegetables for Health" (PROFAV, 2003-2018) to raise awareness and to boost fruit and vegetables production, supply and consumption to improve people's health and farmers' incomes. Efforts were made in line with PROFAV to combat the low

fruit and vegetable consumption rate in the Pacific region. The Pacific Regional Workshop on PROFAV was held in Fiji in October 2014 and allowed the 27 experts attending to discuss the challenges of ACP-Pacific countries and recognise the importance of stepping up advocacy, information and community education in changing the mindset of people on fruit and vegetables as an appealing and healthy diet choice. An action plan was developed on how to improve fruit and vegetable production, marketing and consumption in the individual countries and in the region as a whole.

Even if the demand for unhealthy food continues, there is a growing demand for healthier food options, seen in demand for organic products providing safer options regarding the potential misuse of agrochemicals. This trend is mostly seen in the larger ACP-Pacific countries such as Fiji, Vanuatu and Samoa.



² Global Health Observatory, World Health Organization.

³ FAO.

4.1.2 Demand from the tourism sector

The other main influence on importation is the tourism sector. Over the last 30 years, tourism has become the key economic resource for the ACP-Pacific countries, being a major source of employment and reducing the role of agriculture as a key driver of economic development. Fiji, Vanuatu, Cook Islands and Samoa have large tourism industries, particularly Cook Islands, where the tourism sector generates about 70% of their overall gross domestic product (GDP) and employs about 35% of the country's population.

More than half of the international imports are for the tourism sector and hotel industry. It is composed of a wide range of products. For example, 52% of the fresh produce purchased by Fijian hotels in 2017 was imported, at a cost of US\$18.8 million (Figure 23).

Hotels import various products (meat, seafood, dairy, etc.). Fruit and vegetables are also imported, but limited to tropical fruit, such as mango, bananas, pineapple and watermelon. It is important to note that the demand of the tourism sector is very high and cannot exclusively be met by local production. Moreover, the demand for fruit and vegetables for the tourism sector is different from what is produced locally and the hotels seem reluctant to buy local.

Figure 22: Average contributions of agriculture and tourism to GDP of ACP-Pacific countries (1995–2019) (Source: COLEACP based on IFC, 2018)

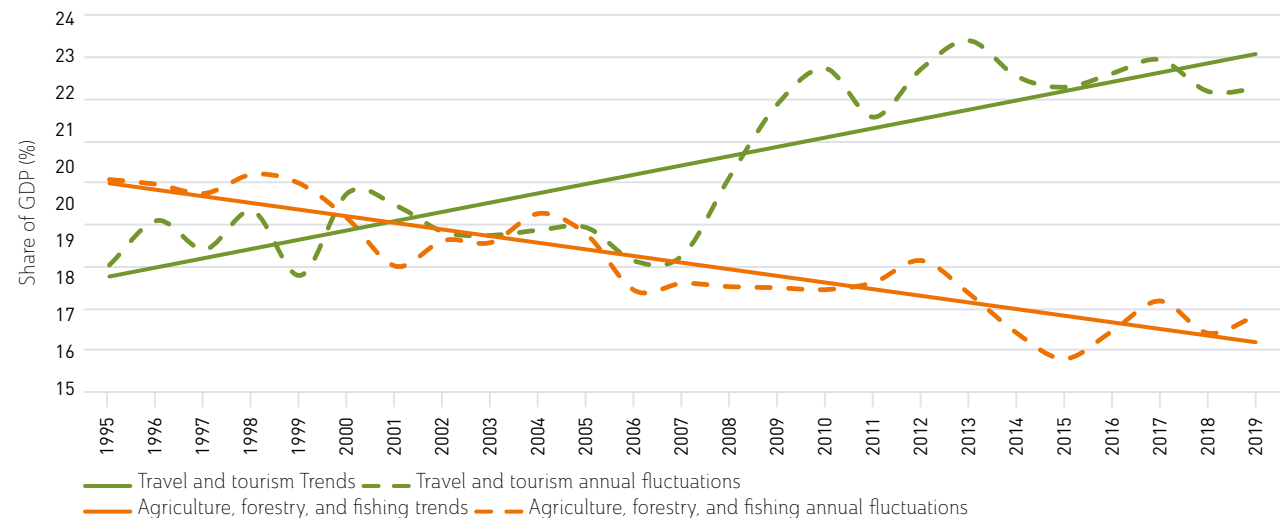
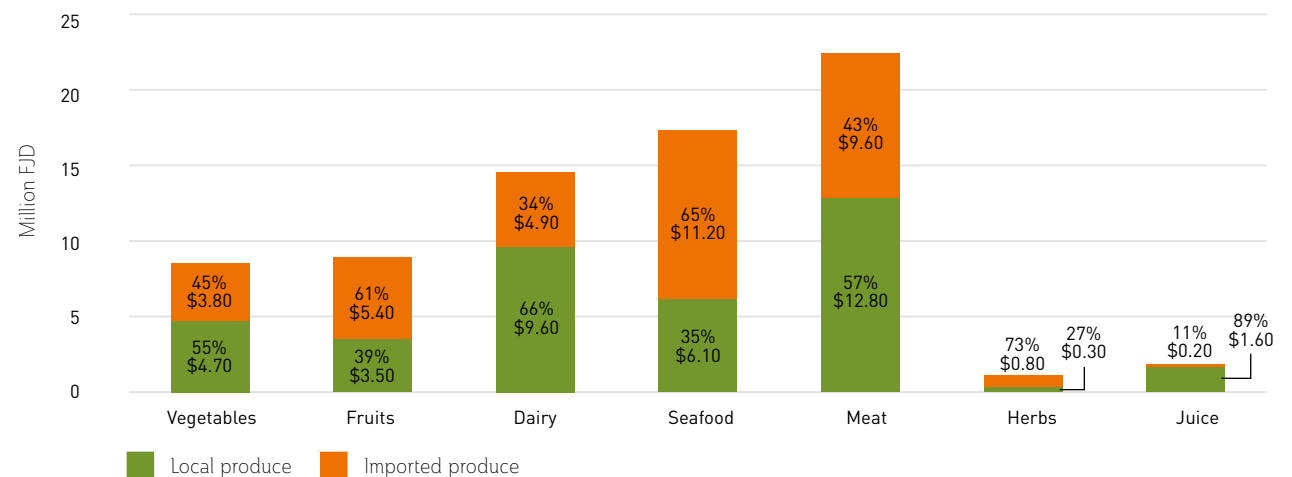


Figure 23: Local and imported fresh produce demanded by Fijian hotels by product categories in 2017, in value (FJD) (Source: IFC, 2018)



In recent times, there has been an increase in the demand for enhanced taste experiences, especially from Australian and New Zealand tourists. They are looking for holiday destinations where food plays an important role in their holiday adventure. This had led to an increased curiosity and a demand for the validation of the sources of local food. This is an opportunity for the agricultural sector in ACP-Pacific countries to liaise with the tourism food and beverage sectors to meet this demand. The prospects are good, as tourists now spend more on food and beverages than anything else, other than accommodation.

ACP-Pacific countries are developing an interest in 'organic tourism'. The cooperation between local smallholder organic producers and tourism structures is a way to promote Pacific products and their local diets. The organic tourism trend is especially strong in Fiji, where several islands with tourist resorts are organically certified and serve their guests food produced from their organic farms.

4.1.3 Impacts of COVID-19 on importation

The COVID-19 crisis has increased the food insecurity issue of the less developed populations in the world. This crisis has disrupted supply chains and transport flows all around the globe, but ACP-Pacific countries were especially hard hit as island states. Being islands with very scattered areas, food is mainly imported through cargo shipment. Thus, port closures and logistics disruptions directly impact the population's food supply to a large extent.

In addition to the difficulties with food imports, the COVID-19 crisis and its impacts on the supply chain also affected food prices, and thus consumption possibilities. For example, in Fiji, where a price control mechanism applies to essential food items such as rice, sugar, salt, vegetables, oil, milk and canned tuna, the price of non-controlled food items (including fruit and vegetables) dramatically increased during the period of lockdown. The price of most consumed vegetables increased between 11-36%, and some products by more than 70%.

4.2 Imports to the ACP-Pacific countries

Although the ACP-Pacific countries are making efforts to produce sufficient fruit, vegetables and spices to meet local needs, they are becoming increasingly dependent on imports of these commodities. These imports are classified into vegetables, fruit (including nuts), processed products (both vegetables and fruit) and spices. This section discusses in detail imports to ACP-Pacific countries.



Imports of fresh or processed fruit and vegetables by the ACP-Pacific countries have increased by 43% over the last decade. From 84,800 tonnes in 2008 to 121,200 tonnes in 2018. The majority of imports originated from within the Oceania region, i.e. other ACP-Pacific countries or nearby trade partners in the region, mainly Australia and New Zealand. The share of imports from these two countries in 2018 represented 67% of total imports. The strongest increase in import volumes was recorded from the European Union (EU28)⁴ with an increase of 559%. Imports rose from 1,700 tonnes in 2008 to 11,200 tonnes in 2018. This increase contributes to make the EU28 the third most important trade partner in terms of import volumes.

Generally, the volumes imported by the ACP-Pacific countries increased for all the regions of origin except for North America and sub-Saharan Africa for which slight decreases in import volumes were recorded (Figure 24).

During the decade under study (2008-2018), the share of imports from Oceania decreased from 75% to 67%, while that of East Asia increased from 15% to 18%, and that of Europe from 2% to 9%. The volume of imports from North America remained stable, which resulted in a decrease in its share of the total imports from 7% to 5% as the overall volume increased.

The volume of fresh and processed fruit and vegetables imported by the ACP-Pacific countries from different world regions gradually increased, reaching its highest point in 2017. Imports from the EU28 continued to increase steadily. However, in 2018 there was a considerable dip in imports from Oceania and East Asia. A probable explanation for this situation is the decreased market access granted to Australia and New Zealand by Fiji and

Figure 24: Trends in imports of horticultural products by ACP-Pacific countries from the major economic blocs in terms of volumes (2008–2018) [Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries]

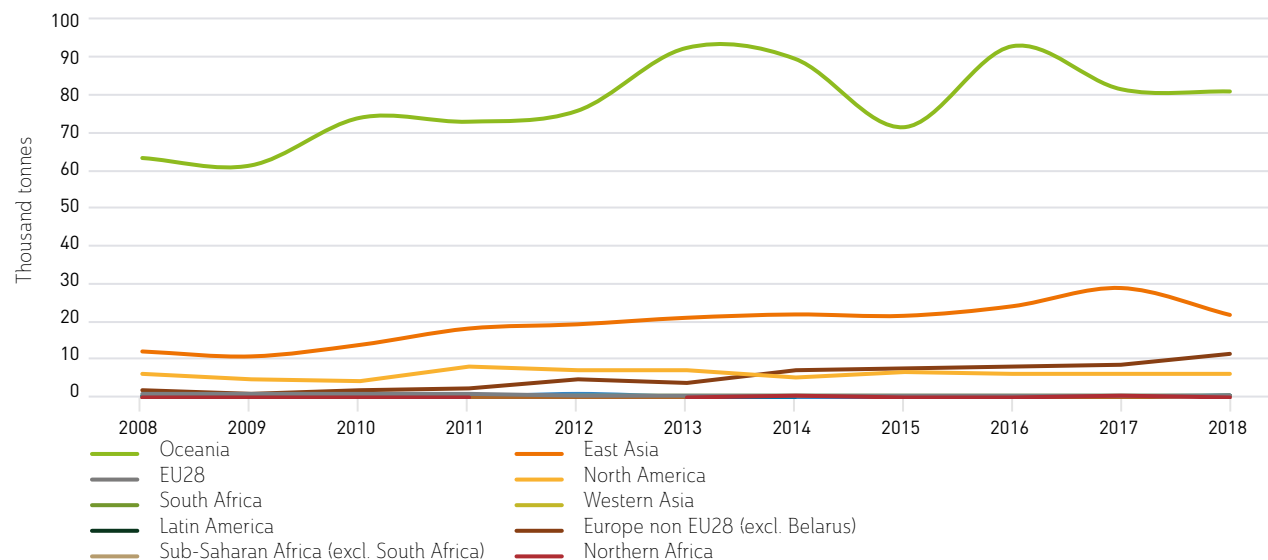


Figure 25: Share of total imports of horticultural products by the ACP-Pacific countries from world regions in terms of volume (2008) [Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries]

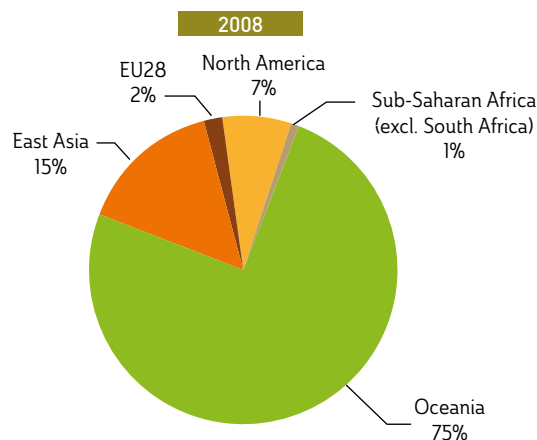
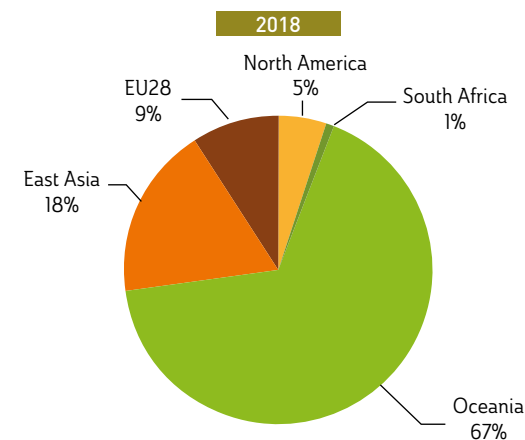
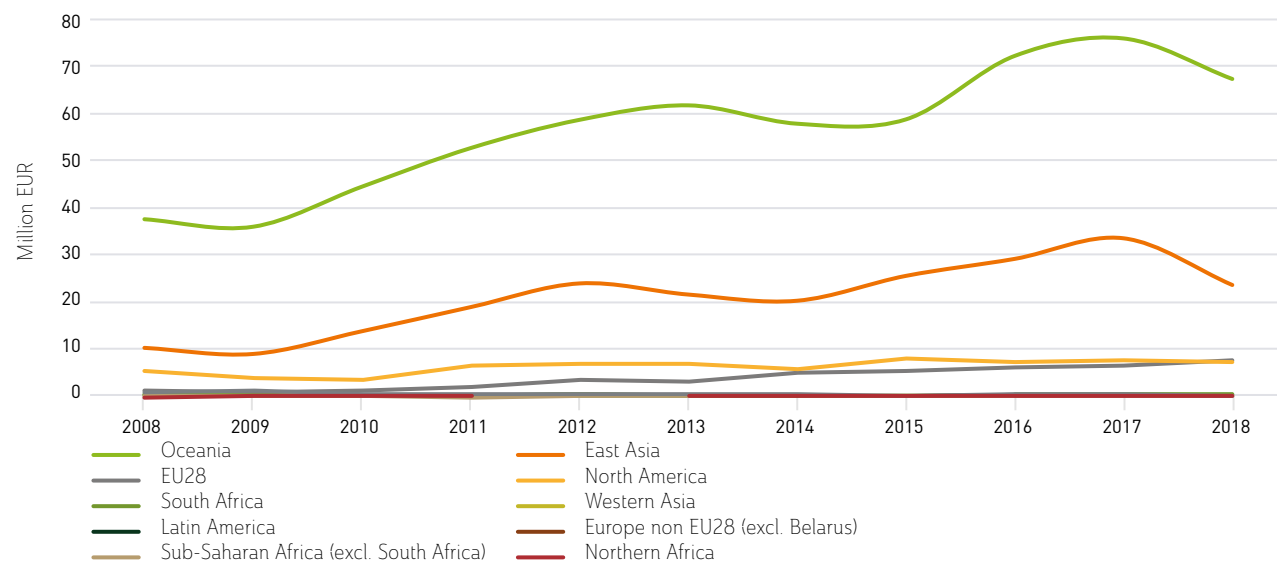


Figure 26: Share of total imports of horticultural products by ACP-Pacific countries from world regions in terms of volume (2018) [Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries]



⁴ Note that because the data in this study predate Brexit, the data for the EU are for 28 countries including the UK.

Figure 27: Trends in total imports of horticultural products by ACP-Pacific countries from world regions in terms of value (current €) (2008–2018) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)



Papua New Guinea upon their refusal to join the Pacific Agreement on Closer Economic Relations (PACER) in April 2017, which could have resulted in lower imports for some major commodities. Another explanation may lie in the greater consumption of local food by the tourism sector.

The trend of the relative share of imports in terms of value (Figure 27) is similar to the trend in volume (Figure 24). There is emerging competition between Oceania, which remains the lead trading partner with ACP-Pacific countries in terms of imports, and East Asia, where trading with China is developing fast. Imports from Europe and North America in terms of value remained relatively small and stable throughout the period.

Figure 28: Share in 2008 of horticultural products imported by ACP-Pacific countries from world regions in terms of value (2008) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)

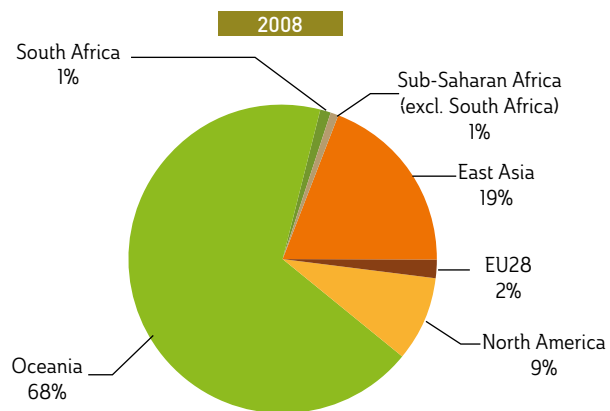
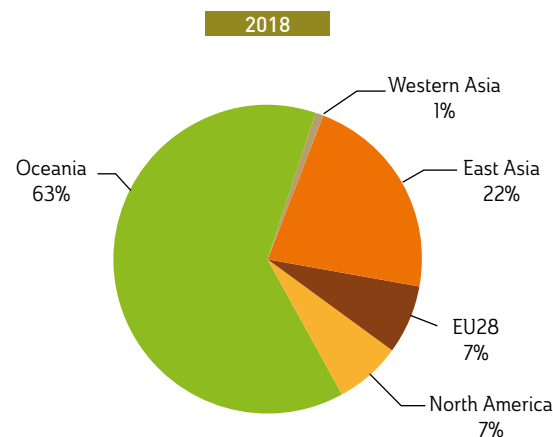


Figure 29: Share in 2018 of horticultural products imported by ACP-Pacific countries from world regions in terms of value (2018) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)



4.3 Overview of commodities imported by ACP-Pacific countries

4.3.1 Vegetables

Roots and tubers are the main vegetable commodities imported by the ACP-Pacific countries. Alliaceous commodities (onion, shallot and other vegetables in that family) were also very important imported vegetable commodities. The key root/tuber is potato, while onion and shallot formed the bulk of the alliaceous commodities.

Importation of fresh potato increased by 44% during the decade, while importation of frozen potato

declined by 69% during the same period. This shows a clear shift from the importation of frozen potato to fresh potato.

Almost all the imports in the vegetable category showed positive growth except frozen potato (Table 7). Some of the vegetable products experienced very impressive growth during the decade, with brassicas showing the highest growth of rate of 209%, followed by frozen ethnic vegetables (110%), celery (105%), and carrot and turnip (94%). The others (except frozen potato) experienced modest growths between 3 and 60%.

Table 7: Volume of top 10 vegetables imported to ACP-Pacific countries (2008 and 2018)

Vegetable (top 10)	Imports (tonnes)		Growth rate (2008–2018)
	2008	2018	
Potato (fresh)	19,112.4	27,477.6	44%
Onion and shallot	12,266.9	18,194.6	48%
Pea (dried)	6,175.1	6,348.3	3%
Carrot and turnip	3,008.9	5,835.2	94%
Garlic	2,618.4	4,187.7	60%
Mixtures of vegetables (frozen)	1,309.9	1,558.6	19%
Other brassicas	405.5	1,252.5	209%
Potato (frozen)	2,550.4	784.6	-69%
Celery	327.1	671.1	105%
Ethnic vegetables (frozen)	266.2	558.4	110%

Source: COLEACP based on IFPRI, CEPII BACI, national statistics ACP-Pacific countries.



4.3.2 Fruit

Apple, oranges and grapes are the main imported fruit. Most of the imported fruit in the top 10 experienced a very high growth rate above 100% during the decade. Notable rises are kiwis, 464%; lemon and limes, 425%; other fruit, 410%;

watermelon, 295%; grapes, 142%; oranges, 127%; and dried coconut, 113%.

Most of these fruit are believed to be imported largely to cater for the needs of the tourism industry and to meet the demands of urban dwellers. Details of fruit importation are given in Table 8.

Table 8: Volume of top 10 fruit imported to ACP-Pacific countries (2008 and 2018)

Fruit [top 10]	Imports [tonnes]		Growth rate [2008–2018]
	2008	2018	
Apple	4,472.2	7,814.1	75%
Orange	1,878.8	4,259.7	127%
Grape	454.7	1,099.7	142%
Other fruit (passion fruit, lychee, tamarind, etc.)	90.3	461.0	411%
Melon	244.4	388.9	59%
Watermelon	94.4	372.9	295%
Grape (dried)	217.8	200.6	-8%
Lemon and limes	38.2	200.6	425%
Kiwi	30.8	173.8	464%
Coconut (dried)	75.8	161.6	113%

Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries.



4.3.3 Processed fruit and vegetables

The ACP-Pacific countries have become increasingly dependent on commodity imports. Processed products are especially appreciated by the growing (urban) populations. In contrast to unprocessed frozen potato, processed frozen potato is by far the most imported processed product and experienced significant growth of 238% between 2008 and 2018.

All other products in the top 10 of this category also saw positive growth except the importation of orange juice (-8%). Other significant growth rates above 50% were groundnut, 89%; apple juice, 88%; jams and purees, 86%; tomato, 61%; and beans, 50%. The details on the imported processed fruit and vegetables are given in Table 9.

Table 9: Volume of top 10 processed fruit and vegetables imported to ACP-Pacific (2008 and 2018)

Processed fruit/vegetable (top 10)	Imports (tonnes)		Growth rate (2008-2018)
	2008	2018	
Potato (frozen)	3,689.3	12,475.6	238%
Mixed juices (fruit/vegetables)	3,524.5	3,822.7	8%
Groundnut	1,892.5	3,569.6	89%
Tomato	1,020.8	1,647.7	61%
Jams and purées (other fruit/nuts)	772.6	1,438.7	86%
Orange juice	1,422.6	1,306.8	-8%
Bean	733.5	1,098.2	50%
Apple juice	506.2	952.4	88%
Tomato products	787.9	861.9	9%
Potato	480.1	701.0	46%

Source: COLEACP based on IFPRI, CEPII BACI, national statistics ACP-Pacific countries.



4.3.4 Spices

Although the ACP-Pacific countries are important producers of spices, they also import them. It should, however, be noted that about 25% of these imports originate within the ACP-Pacific region. Coriander seed leads the 10 top most imported spices, but the rate of import dropped by 9% during the decade. Other high-ranking spices imported during the period include mixtures of spices, turmeric, ginger and cumin seed. In terms of growth rate, star anise or badian seed tops the list with 482%. Other top ranking growth rates were seen in ginger (210%), cardamom (181%)

and mixtures (132%). Other positive growth rates ranging between 10 and 68% were seen in other spices, except coriander seed.

Some reasons assigned to the import growth rate of the spices during the period include their use by restaurants, hotels and urban populations. The increase in ginger imports in particular was remarkable when compared with its average exports. The imports make up just about 10% of what was exported from the ACP-Pacific countries. Details on importation of the top 10 spices are given in Table 10.

Table 10: Volume of top 10 spices imported to ACP-Pacific (2008 and 2018)

Spices (top 10)	Imports (tonnes)		Growth rate (2008–2018)
	2008	2018	
Coriander seed	412.1	375.6	-9%
Mixtures	202.0	469.3	132%
Turmeric	169.1	226.6	34%
Ginger	63.7	197.1	209%
Cumin seed	82.6	98.3	19%
Capsicums and Pimenta, dried/crushed	57.8	97.2	68%
Pepper (<i>Piper nigrum</i>), crushed	61.3	67.4	10%
Star anise (<i>badian</i>) seed	9.6	56.1	484%
Cardamom	11.3	31.8	181%
Clove	16.1	25.7	60%

Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries.



4.4 Overview of imported commodities by region of origin in 2018

4.4.1 Imports from Oceania (except ACP-Pacific countries)

Imports from Oceania aside from the ACP-Pacific countries mainly originated from Australia, 58,800 tonnes (73%), and New Zealand, 21,000 tonnes (26%), in 2018. The remaining 1% is shared between Cocos Islands, Guam, French Polynesia and American Samoa (Pacific territories that are not members of ACP). The main imported commodities from Oceania are shown in Table 11.



Table 11: Volume of top 10 horticultural products and others grouped, imported by ACP-Pacific countries from non-ACP Oceania (2018)

Commodity	Imports by ACP-Pacific countries from Oceania 2018 (tonnes)	Share of total imports from Oceania
Vegetables, roots & tubers	59,594.9	70.8%
Potato	25,226.2	30.0%
Onion and shallot	16,643.3	19.8%
Carrot and turnip	5,693.9	6.8%
Pea (dried)	5,272.9	6.3%
Other brassicas	942.4	1.1%
Mixtures of vegetables (frozen)	889.4	1.1%
Potato (frozen)	735.6	0.9%
Celery	624.3	0.7%
Cauliflower and broccoli	449.4	0.5%
Tomato	426.1	0.5%
Other vegetables, roots and tubers	2,691.4	3.2%
Fruit, nuts	12,193.4	14.5%
Apple	6,700.4	8.0%
Oranges	3,310.8	3.9%
Grape	659.4	0.8%
Melon	277.1	0.3%
Watermelon	239.8	0.3%
Lemon and limes	169.5	0.2%
Kiwi	163.1	0.2%
Coconut (dried)	65.9	0.1%
Other fruit and nuts (frozen)	57.4	0.1%
Coconut	47.4	0.1%

Commodity	Imports by ACP-Pacific countries from Oceania 2018 [tonnes]	Share of total imports from Oceania
Other fruit and nuts	502.5	0.6%
Processed fruit & vegetables	12,193.4	14.5%
Potato (frozen)	3,075.8	3.7%
Mixed juices (fruit/vegetable)	1,124.1	1.3%
Bean	776.1	0.9%
Potato	458.3	0.5%
Other fruit and nuts	436.1	0.5%
Orange juice	344.0	0.4%
Apple juice	253.8	0.3%
Tomato	197.9	0.2%
Pineapple juice	188.0	0.2%
Mixtures of vegetables (frozen, not potato)	166.6	0.2%
Other processed fruit and vegetables	5,172.6	6.1%
Spices	239.3	0.3%
Mixtures of spices	126.0	0.150%
Coriander seed	52.0	0.062%
Pepper (<i>Piper nigrum</i>), crushed	23.3	0.028%
Ginger	20.5	0.024%
Capsicums and Pimenta, dried/crushed	7.5	0.009%
Pepper (<i>Piper nigrum</i>)	2.8	0.003%
Star anise (badian) seed	2.6	0.003%
Cinnamon	3.1	0.004%
Vanilla	0.8	0.001%
Turmeric (<i>Curcuma longa</i>)	0.6	0.001%
Other spices	0.1	0.0001%

Source: COLEACP based on IFPRI, CEPII BACI, national statistics ACP-Pacific countries.



4.4.2 Imports from East Asia

Imports from East Asia mainly originated from China with 12,100 tonnes representing 56% of total imports from East Asia in 2018. Indonesia formed the next largest source of imports with 2,700 tonnes (12%). Other important origins of imports in the region were: Malaysia, 8%; Singapore, 8%; Thailand, 6%; the Philippines, 4%; India, 4%; Pakistan, 1%; and Hong Kong, 1%. The main imported commodities from East Asia were: garlic, 16.8%; groundnut, 14.5%; potato, 8.2%; and mixed juice (fruit/vegetables), 6.9% (Table 12).



Table 12: Volume of top 10 horticultural products and others grouped, imported by ACP-Pacific countries from East Asia (2018)

Commodity	Imports by ACP-Pacific countries from East Asia 2018 [tonnes]	Share of total Imports from East Asia
Vegetables, roots & tubers	8,477.0	37.2%
Garlic	3,821.7	16.8%
Potato	1,869.6	8.2%
Onion and shallot	785.6	3.4%
Mixtures of vegetables (frozen)	557.7	2.4%
Pea (dried)	273.9	1.2%
Black gram and mungo bean (<i>Vigna mungo</i> and <i>V. radiata</i>) (dried)	230.2	1.0%
Ethnic vegetables (frozen)	195.7	0.9%
Other legumes (dried)	164.0	0.7%
Onion (dried)	132.0	0.6%
Chickpea (dried)	87.1	0.4%
Other vegetables, roots and tubers	359.5	1.6%
Fruit, nuts	1,584.7	6.9%
Apple	847.5	3.7%
Grape (dried)	110.9	0.5%
Orange	108.5	0.5%
Other fruit (dried)	98.7	0.4%
Coconut (dried)	94.7	0.4%
Watermelon	63.2	0.3%
Grape	44.7	0.2%
Other nuts	35.2	0.2%
Coconut	29.7	0.1%
Other fruit (passion fruit, lychee, tamarind, etc.)	21.0	0.1%
Other fruit and nuts	130.6	0.6%

Commodity	Imports by ACP-Pacific countries from East Asia 2018 [tonnes]	Share of total Imports from East Asia
Processed fruit & vegetables	11,601.9	50.9%
Groundnut	3,307.7	14.5%
Mixed juices (fruit/vegetable)	2,146.4	9.4%
Jams and purées (other fruit/nuts)	1,125.5	4.9%
Orange juice	679.9	3.0%
Tomato products	646.8	2.8%
Products preserved by sugar	519.4	2.3%
Apple juice	472.1	2.1%
Pineapple juice	339.3	1.5%
Tomato	253.0	1.1%
Single citrus juice (not orange or grapefruit)	228.4	1.0%
Other processed fruit and vegetables	1,883.4	8.3%
Spices	1,147.6	1.4%
Mixtures of spices	280.7	0.33%
Turmeric (<i>Curcuma longa</i>)	225.7	0.27%
Coriander seed	146.3	0.17%
Ginger	143.2	0.17%
Cumin seed	98.3	0.12%
Capsicums and Pimenta, dried/crushed	85.8	0.10%
Star anise (<i>badian</i>) seed	49.4	0.06%
Pepper (<i>Piper nigrum</i>), crushed	32.1	0.04%
Cinnamon	24.4	0.03%
Cardamom	20.1	0.02%
Other spices	41.7	0.2%

Source: COLEACP based on IFPRI, CEPII BACI, national statistics ACP-Pacific countries.



4.4.3 Imports from the EU28

The origins of imports from the European Union were mainly the Netherlands, with 4,300 tonnes (46%), and Belgium, 3,500 tonnes (36%). Other important origins of imports include: Italy, 9%; Cyprus, 5%; Portugal, 2%; the United Kingdom, 1%; and France, 1%. The main commodities imported from the EU28 were: frozen potato, 78.6%; dried apple, 8.8%; and frozen ethnic vegetables, 1.8% (Table 13).



Table 13: Volume of top 10 horticultural products and others grouped, imported by ACP-Pacific countries from the EU28 (2019)

Commodity	Imports by ACP-Pacific countries from EU28 2019 (tonnes)	Share of total Imports from the EU28
Vegetables, roots & tubers	262.9	2.7%
Ethnic vegetables (frozen)	175.0	1.8%
Ethnic vegetables	26.4	0.3%
Bean	16.5	0.2%
Mixtures of vegetables (frozen)	11.3	0.1%
Pea (frozen)	5.9	0.1%
Olive (preserved)	5.8	0.1%
Mushroom (preserved)	4.3	0.0%
Sweetcorn (frozen)	4.1	0.0%
Bean (frozen)	3.1	0.0%
Other beans (dried)	2.3	0.0%
Other vegetables, roots and tubers	8.2	0.1%
Fruit, nuts	7.0	0.1%
Apple (dried)	847.5	8.8%
Plum (dried)	110.9	1.1%
Grape (dried)	108.5	1.1%
Other nuts	98.7	1.0%
Melon	94.7	1.0%
Walnut	63.2	0.7%
Other fruit and nuts (frozen)	44.7	0.5%
Fig	35.2	0.4%
Watermelon	29.7	0.3%

Commodity	Imports by ACP-Pacific countries from EU28 2019 [tonnes]	Share of total Imports from the EU28
Date	21.0	0.2%
Processed fruit & vegetables	9,224.8	95.3%
Potato (frozen)	7,607.4	78.6%
Tomato	663.6	6.9%
Orange juice	197.7	2.0%
Apple juice	136.2	1.4%
Bean	119.6	1.2%
Pineapple juice	117.6	1.2%
Mixed juices (fruit/vegetables)	87.1	0.9%
Potato	83.5	0.9%
Vegetables (acid preserved)	46.8	0.5%
Jams and purées (other fruit/nuts)	26.7	0.3%
Other processed fruit and vegetables	138.6	1.4%
Spices	181.1	0.2%
Coriander seed	167.2	0.1985%
Mixtures of spices	7.1	0.0085%
Star anise (badian) seed	2.6	0.0031%
Pepper (<i>Piper nigrum</i>), crushed	2.2	0.0026%
Capsicums and Pimenta, dried/crushed	0.8	0.0010%
Pepper (<i>Piper nigrum</i>)	0.8	0.0009%
Turmeric	0.3	0.0003%
Cinnamon	0.1	0.0001%

Source: COLEACP based on EUROSTAT.



4.4.4 Imports from North America

Imports from North America mainly originated from the USA, from where 5,400 tonnes or 91% of total imports from the region came in 2018. The remaining 9% came from Canada with 500 tonnes of horticultural products. The main imported commodities from North America were: oranges, 12.9%; onion and shallot, 12.3%; dried pea, 8.5% and grapes, 6.5%.



Table 14: Volume of top 10 horticultural products and others grouped, imported by ACP-Pacific countries from North America (2018)

Commodity	Imports by ACP-Pacific countries from North America 2018 [tonnes]	Share of total Imports from North America
Vegetables, roots & tubers	2,598.0	43.4%
Onion and shallot	736.7	12.3%
Pea (dried)	508.9	8.5%
Other brassicas	276.2	4.6%
Potato	223.2	3.7%
Lettuce	128.5	2.1%
Carrot and turnip	83.4	1.4%
Cauliflower and broccoli	75.7	1.3%
Tomato	75.1	1.3%
Capsicums and Pimenta	68.8	1.1%
Chickpea (dried)	46.1	0.8%
Other vegetables, roots and tubers	375.5	6.3%
Fruit, nuts	1,974.5	33.0%
Orange	770.7	12.9%
Other fruit (passion fruit, lychee, tamarind, etc.)	391.7	6.5%
Grape	386.6	6.5%
Apple	119.1	2.0%
Melon	103.7	1.7%
Other nuts	47.4	0.8%
Watermelon	27.5	0.5%
Grapefruit	18.8	0.3%
Lemon and limes	15.3	0.3%
Plum (dried)	13.1	0.2%
Other fruit and nuts	80.5	1.3%

Commodity	Imports by ACP-Pacific countries from North America 2018 [tonnes]	Share of total Imports from North America
Processed fruit & vegetables	1,294.7	21.6%
Mixed juices (fruit/vegetable)	325.7	5.4%
Potato (frozen)	279.8	4.7%
Groundnut	112.7	1.9%
Other fruit and nuts	60.6	1.0%
Bean	55.9	0.9%
Nuts and other seeds (not groundnut)	45.6	0.8%
Orange juice	45.3	0.8%
Jams and purées (other fruit/nuts)	41.7	0.7%
Apple juice	38.2	0.6%
Sweetcorn	35.2	0.6%
Other processed fruit and vegetables	254.2	4.2%
Spices	115.1	0.1%
Mixtures of spices	51.2	0.1%
Ginger	32.0	0.038%
Pepper (<i>Piper nigrum</i>)	11.4	0.014%
Pepper (<i>Piper nigrum</i>), crushed	9.1	0.011%
Vanilla	4.3	0.005%
Capsicums and Pimenta, dried/crushed	3.1	0.004%
Cardamom	2.3	0.003%
Cinnamon	1.1	0.001%
Star anise (badian) seed	0.6	0.001%



4.4.5 Imports from western Asia

Imports from western Asia mainly originated from the United Arab Emirates - 160 tonnes of horticultural products representing 43% of total imports from the region in 2018. Other countries that ACP-Pacific countries imported from were Turkey (13 tonnes, 38%), Iran (65 tonnes, 18%) and Bahrain (5 tonnes, 1%).

The main imported commodities from western Asia were: date, 20%; other fruit, other processed fruit and vegetables, 15.4%; mixed juice, 10%; and dried grapes, 9%.



Table 15: Volume of top 10 horticultural products and others grouped, imported by ACP-Pacific countries from western Asia (2018)

Commodity	Imports by ACP-Pacific countries from West Asia 2018 [tonnes]	Share of total Imports from West Asia
Vegetables, roots & tubers	48.3	13%
Chickpea (dried)	10.5	3%
Pea (dried)	7.4	2%
Other beans (dried)	6.8	2%
Lentil (dried)	6.0	2%
Bean	5.5	1%
Other vegetables, roots and tubers	12.3	3%
Fruit, nuts	133.4	36%
Date	74.0	20%
Grape (dried)	34.6	9%
Other fruit (passion fruit, lychee, tamarind, etc.)	14.9	4%
Peach and nectarine	3.4	1%
Pineapple	1.8	0%
Other fruit and nuts	4.8	1%
Processed fruit & vegetables	187.3	51%
Mixed juices (fruit/vegetable)	37.8	10%
Potato (frozen)	26.4	7%
Orange juice	23.4	6%
Apple juice	21.9	6%
Jams and purées (other fruit/nuts)	20.6	6%
Other processed fruit and vegetables	57.3	15%
Spices	1.6	0.002%
Mixtures of spices	1.6	0.002%

4.5 Growing imports, leading to health issues

Food security is a major concern for the ACP-Pacific countries and has impacted the consumption of both fruit and vegetables resulting in nutrition and health issues. Traditionally, ACP-Pacific countries had diets based on local products; however, ACP-Pacific countries are not self-sufficient in their overall food production, including fruit and vegetables; and thus have become increasingly dependent on commodity imports. Globalisation has opened the ACP-Pacific countries to the international food market supply for fast food, unhealthy products and carbonated drinks. They have become influenced by and dependent on these food imports, particularly processed meats and fast food, which are more expensive and less nutritious than locally produced food. These diets have resulted in high rates of malnutrition, non-communicable diseases and obesity among Pacific populations. Obesity is a major health issue

in most parts of the region. Home production of fresh fruit and vegetables is common in the ACP-Pacific region, with consumption of these products aimed at achieving food security. However, the locally produced fruit and vegetables do not meet the larger overall demand in these countries. The total value of fresh and processed fruit and vegetables imported by the ACP-Pacific countries from different world regions has gradually increased, reaching a high point in 2017. Imports of fresh and processed fruit and vegetables increased by 43% over the decade under consideration from 84,800 tonnes in 2008 to 121,200 tonnes in 2018. The main vegetables imported were roots and tubers, the majority being potato. Apple, oranges and grapes were the main fruit imported. Processed products were especially appreciated by growing (urban) populations, restaurants and the expanding tourism industry. Although the ACP-Pacific countries are important producers of spices, they also import significant quantities of them.

Imports from Oceania outside the ACP-Pacific countries mainly originate from Australia and New Zealand. Overall, the volumes imported by the ACP-Pacific countries increased for all regional origins being studied except for North America and sub-Saharan Africa, for which slight decreases in import volumes were recorded. Imports from East Asia mainly originate from China, Indonesia and Malaysia; imports from the EU28 mainly originate from the Netherlands and Belgium. The region also imported fruit and vegetables from Italy, the UK and France. Imports from North America mainly originate from the USA, with a little from Canada. Intra-regional trade between the ACP-Pacific countries has increased in recent years.

Unfortunately, most of the ACP-Pacific countries are highly vulnerable to the devastating effects of climate change. The International Panel on Climate Change Fourth Assessment Report considers climate change as a threat multiplier for all Pacific Island countries as it is a major cause of malnutrition and chronic hunger in the region.







5

EXPORTATION OF HORTICULTURAL PRODUCTS BY ACP-PACIFIC COUNTRIES

Aside from the heavy importation of horticultural products into the ACP-Pacific countries, these countries also export a good volume of horticultural products to the outside world, although it amounts to only about 25% of imports by volume.

5.1 Factors influencing exportation

Before going into more detail on the export trade, it is important to highlight some factors that influence it. The main element impacting exportation currently is the COVID-19 crisis. Already mentioned and detailed as a factor influencing importation (section 4.1.3), the COVID-19 pandemic and its impact on the food supply chain also had consequences on exportation. Higher transportation costs, both air and sea, affect the capacity of ACP-Pacific islands to export goods, as do staff quarantine, travel restriction, and other pandemic-related restrictions.

The sanitary crisis also raised awareness of the importance of consuming healthy food, and of supporting local businesses and producers. The trend towards organic food has increased during the pandemic worldwide. People also want to buy local to relaunch and support the local economy. This last statement considers only the European market, as we don't have enough information concerning other international markets, such as the USA and Asia. The tendency to buy more local fruit and vegetables in Europe might impact the ACP-Pacific islands less, as it is not their main export market. However, it is possible that similar conclusions can be made about other markets.

Unfortunately, the trade data highlighted below do not report these changes due to the pandemic, as the period covered ends in 2018.

5.2 Subregional trade of the ACP-Pacific countries

First, intraregional trade can be considered low if we look at the small volumes of trade in the region, only hundreds of tonnes.

Intraregional trade between the ACP-Pacific countries and the other countries in the Pacific region saw mixed prospects over the decade covered by the study. Countries such as Tonga, Tuvalu and Samoa saw their relative shares of

intraregional imports decline between 2008 and 2018, while other countries, such as Kiribati, Nauru and Vanuatu, saw their relative shares, and therefore their dependency, increase. This is particularly true for Kiribati, which is facing a decrease and deterioration of its soils due to the effects of climate change.

The top 10 commodities traded among the ACP-Pacific countries were mixed juices (fruit/vegetable), potato (fresh, frozen and processed), mixtures of vegetables (frozen), nuts and other seeds (excluding groundnut), groundnut, tomato, cassava, ethnic roots and tubers, watermelon and pineapple. Apart from watermelon, most export commodities had their origin in Fiji because it serves as a trade hub and port for most ACP-Pacific countries.

Figure 30: Share of the horticultural products imported by ACP-Pacific countries coming from intraregional trade in terms of volume (2008 and 2018) [Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries]

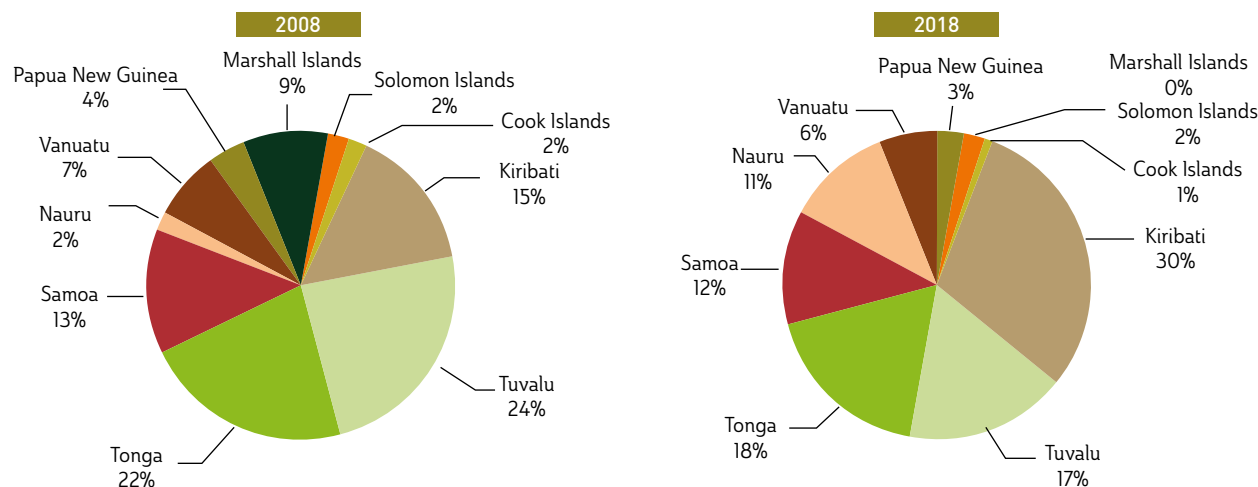
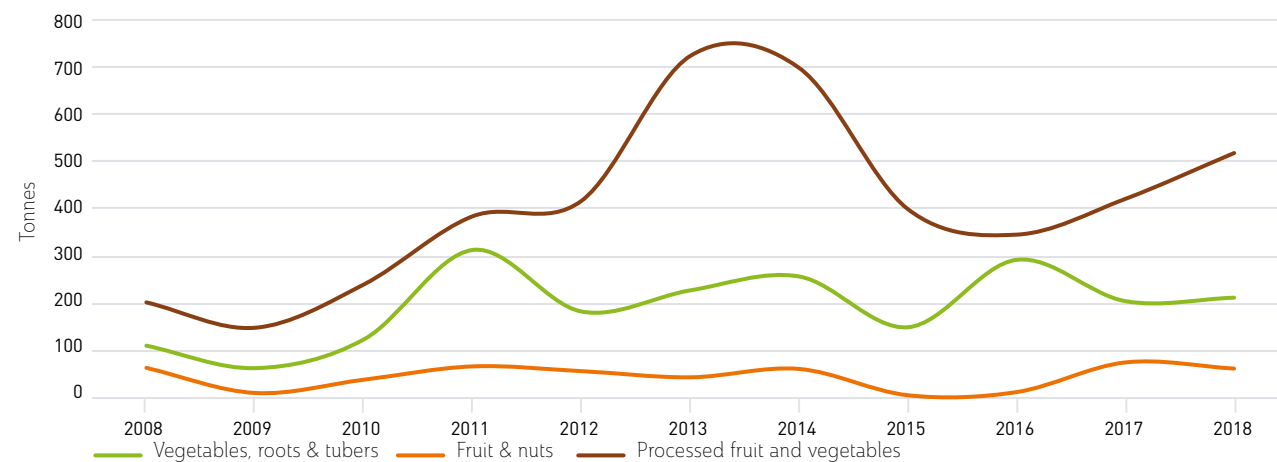


Figure 31: Intraregional trade trends of horticultural products by ACP-Pacific countries (2008-2018) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)



As Figure 31 shows, intraregional trade has increased overall in recent years. The volume of trade of processed fruit and vegetables has more than doubled over the past decade. It reached an impressive peak in 2013 and 2014 with more than 700 tonnes involved in inter-island trade. Vegetable trade doubled compared with the end of the preceding decade. Trade in fruit between the ACP-Pacific countries remained stable over the 2008-2018 period and is less important.

The main subregional exporter among the ACP-Pacific countries is Fiji, which also operates as a hub for the re-export of goods for other countries of the ACP-Pacific group. The most exported products were juices, potato, other roots and tubers, nuts, and some fresh and frozen vegetables. The only fresh fruit among the top 10 most exported products in the region were watermelon and pineapple. They ranked ninth and tenth, which illustrates how little fruit are involved in the intraregional trade.



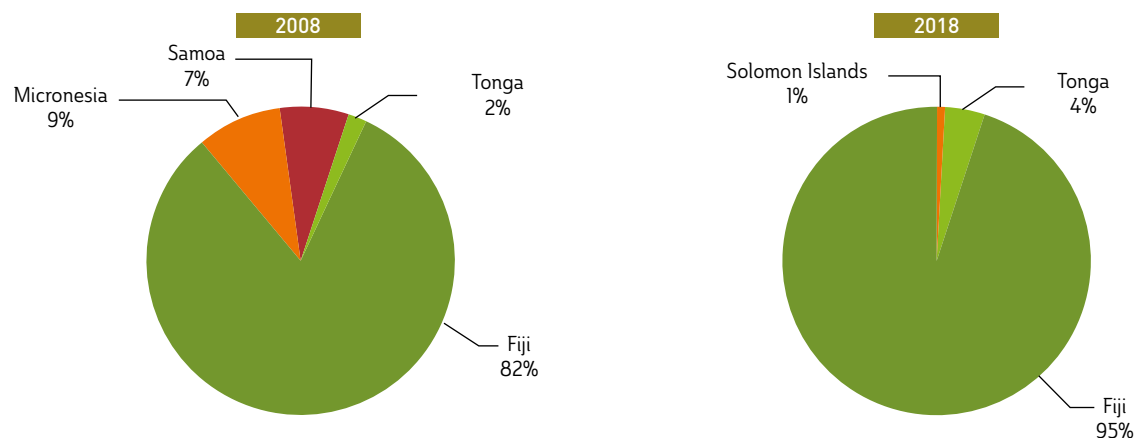
Table 16: Volume of top 10 horticultural products traded internally among ACP-Pacific countries and their share of total intraregional trade (2018)

Top 10 commodities	Main exporter[s]	Main importers	Quantity 2018 (tonnes)	Share of total intraregional trade volume
Mixed juices (fruit/vegetable)	Fiji	Kiribati, Tonga, Nauru, Tuvalu	165.3	20.9%
Potato (fresh, frozen and processed)	Fiji	Tuvalu, Vanuatu, PNG, Samoa, Solomon Islands	110.8	14.0%
Mixtures of vegetables (frozen)	Fiji	Kiribati, Samoa, Tuvalu, Nauru	49.1	6.2%
Nuts and other seeds (excluding groundnut)	Fiji	Tonga, Kiribati, Vanuatu, Samoa	49.0	6.2%
Groundnut	Fiji	Tonga, Kiribati, Tuvalu, Vanuatu	48.1	6.1%
Tomato	Fiji	Nauru, Tonga, Vanuatu, Kiribati	47.2	6.0%
Cassava	Fiji, Solomon Islands	Kiribati, Tuvalu, Nauru, Marshall Islands	36.5	4.6%
Ethnic roots and tubers	Fiji, Solomon Islands	Tuvalu, Kiribati, Nauru, Marshall Islands	36.1	4.6%
Watermelon	Tonga	Samoa	32.0	4.0%
Pineapple	Fiji	Samoa, Kiribati, Tuvalu, Tonga	28.2	3.6%

PNG, Papua New Guinea.

Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries.

Figure 32: Share of intraregional exports of horticultural products by ACP-Pacific country of origin (2008 and 2018) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)



5.3 Export at the regional level (Oceania)

While there were some variations in regional trade between 2008 and 2017, a more significant period of activity was seen in 2014 and 2015, when exports from ACP-Pacific countries to the regional markets reached their peak, having remained fairly stable during the preceding years (Figure 33). There was a slight decline in vegetable exports during the decade of study (just under 15,000 tonnes in 2017), despite the peak in 2015. Exports of processed fruit, fresh fruit and nuts saw similar trends during the decade, and performed well below vegetable exports, with little variation.

The total volume of horticultural commodities exported to the regional market by the ACP-Pacific

countries in 2017 was 18,126.8 tonnes, of which vegetables represented the largest share (76.6%), followed by fruit and nuts (19.1%), and processed fruit and vegetables (4.3%).

The common destinations in the regional market are Australia (41%), New Zealand (58%) and other non-ACP-Pacific countries (1%).

The main vegetables exported to the regional market were roots and tubers, such as cassava, yams, sweet potato and taro. These vegetables accounted for almost 60% of the total export of all horticultural products by ACP-Pacific countries. After vegetables, coconut is also an important export product that accounts for 12.2%, and the share of fresh and frozen ethnic vegetables was a little short of 10% of all horticultural exports to the rest of Oceania.

The destinations for these products were mainly the two largest economies in the region, namely Australia and New Zealand. Of these two countries, New Zealand remains the most important partner to ACP-Pacific countries. Even though the relative share of exports to New Zealand decreased to 58% during the period of study, it was still more than that to Australia (41%). The main source of exports from the ACP-Pacific countries to the regional Oceanic market is Fiji: beside being instrumental in production of horticultural crops, the port in Fiji also serves the interests of several other ACP countries in intraregional and international trade. Other notable exporting ACP-Pacific countries in the region whose trading activities saw growth in exportation of horticultural products in regional trade during the period of study were Tonga and Solomon Islands.

Figure 33: Trends of horticultural products exported from ACP-Pacific countries to the rest of Oceania (2008–2017) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)

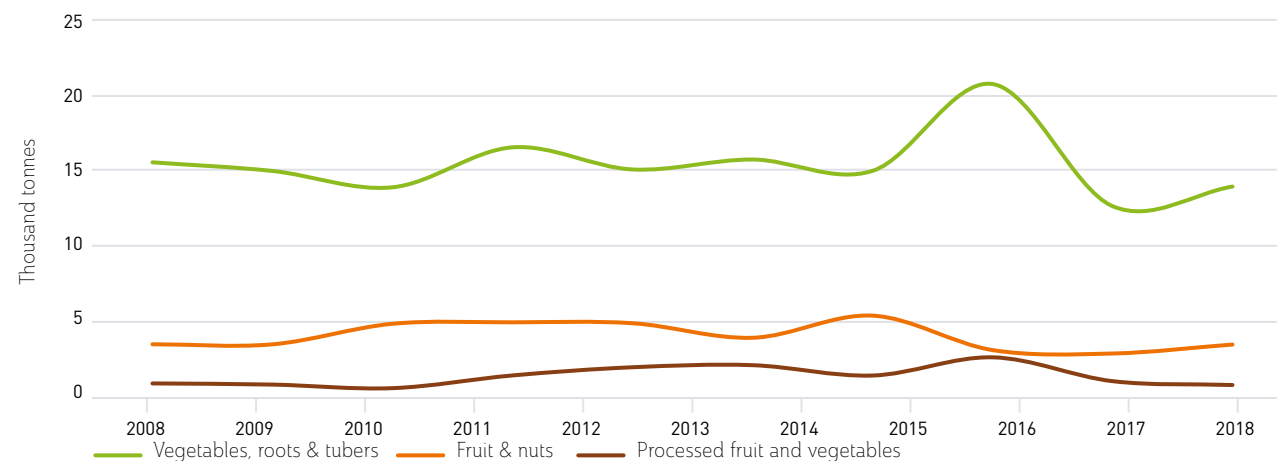


Table 17: Volume of top 10 horticultural products and others grouped, exported by ACP-Pacific countries to the rest of Oceania (2017)

Commodity	Exports 2017 (tonnes)	Percentage of total exports to Oceania
Vegetables, roots & tubers	13,888.3	76.6%
Ethnic roots and tubers	9,103.8	50.2%
Cassava	1,736.2	9.6%
Ethnic vegetables	1,351.5	7.5%
Mixtures of vegetables (preserved)	521.3	2.9%
Ethnic vegetables (frozen)	438.9	2.4%
Eggplant	301.9	1.7%
Other legumes	139.3	0.8%
Sweet potato	65.5	0.4%
Other beans (dried)	31.0	0.2%
Edible roots (salsify, radish, etc.)	27.3	0.2%
Other vegetables, roots and tubers	171.6	0.9%
Fruit, nuts	3,457.4	19.1%
Coconut	2,208.9	12.2%
Other fruit and nuts (frozen)	369.7	2.0%
Watermelon	328.9	1.8%
Pawpaw/papaya	270.4	1.5%
Other fruit (passion fruit, lychee, tamarind, etc.)	75.5	0.4%
Bananas and plantain	67.6	0.4%
Coconut (dried)	28.8	0.2%
Cashew nut	25.4	0.1%
Almond	18.2	0.1%
Mango, guava and mangosteen	17.2	0.1%
Other fruit and nuts	46.8	0.3%

Commodity	Exports 2017 (tonnes)	Percentage of total exports to Oceania
Processed fruit & vegetables	781.1	4.3%
Products preserved by sugar	382.7	2.1%
Other fruit and nuts	138.3	0.8%
Jams and purées (other fruit/nuts)	55.1	0.3%
Single juices (other fruit/vegetable)	55.1	0.3%
Vegetables (acid preserved)	38.2	0.2%
Mixed juices (fruit/vegetable)	26.6	0.1%
Vegetables (acid preserved, excluding cucumber and gherkin)	20.6	0.1%
Pea	15.3	0.1%
Groundnut	10.8	0.1%
Bean	9.9	0.1%
Other processed fruit and vegetables	28.4	0.2%



Figure 34: Destinations and percentages of horticultural products exported by the ACP-Pacific countries to Oceania (2008 and 2017) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)

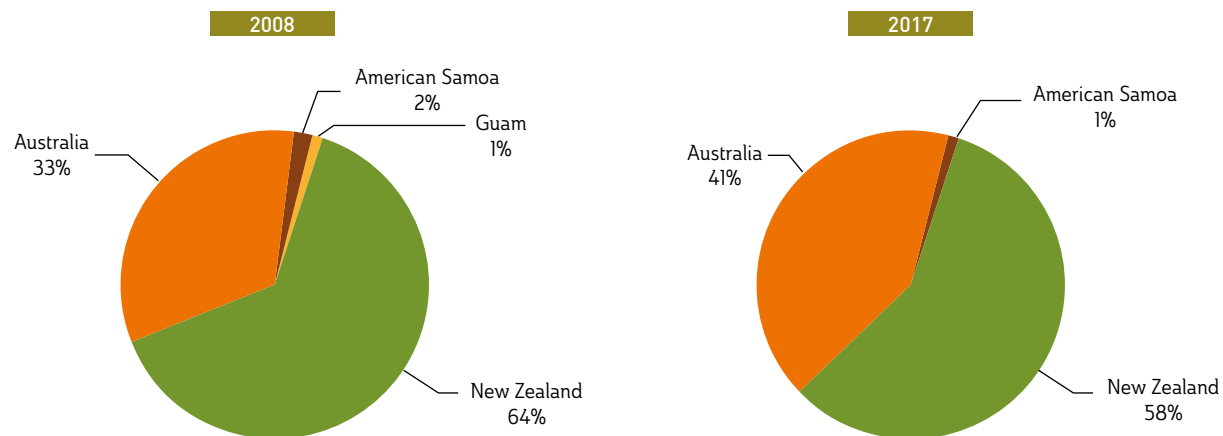
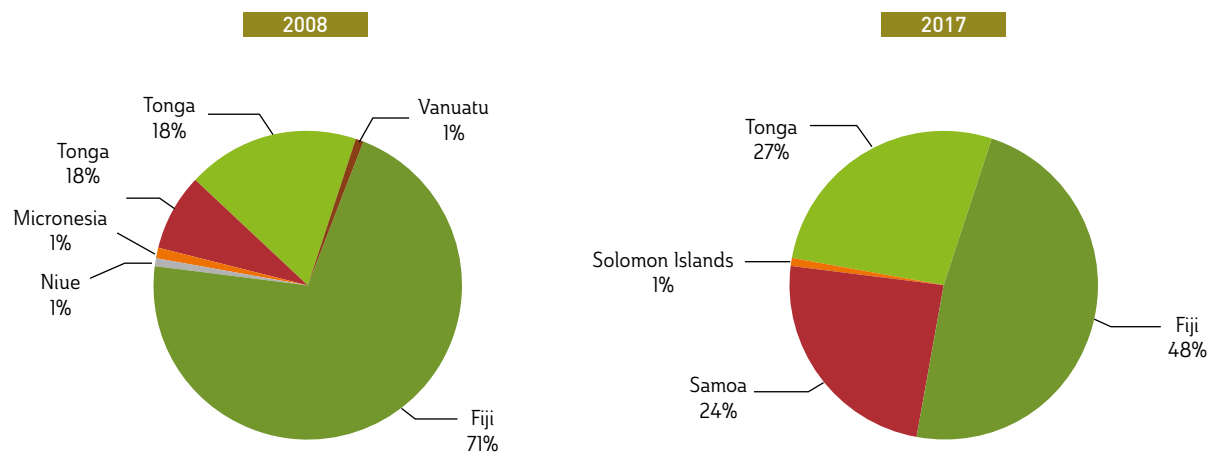


Figure 35: Origins and percentages of horticultural products exported by ACP-Pacific countries to Oceania (2008 and 2017) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)



5.4 Export trade of ACP-Pacific countries at the global level

The international markets are considered under regional economic blocs. Those with significant trading activities in terms of importing from ACP-Pacific countries that were considered for this study were East Asia, North America and the EU28.

5.4.1 Export to East Asia

Exports to East Asia fluctuated significantly during the decade under study, with a period of significant activity between 2012 and 2013, when vegetable exports increased tremendously. The volume of vegetables exported by ACP-Pacific countries to this region during the period was approximately 33.3% of the volume traded with Australia and New Zealand combined. The volume of vegetables exported to East Asia more than doubled to 5,000 tonnes in 2012, climbing to its highest point of the period to 6,000 tonnes in 2013, before dipping sharply to 2,000 tonnes in 2014. Fruit exports to the region, however, remained very low, as the region is also a major producer of coconut, which is the main fruit exported by the ACP-Pacific countries. Export of processed horticultural products saw a steady increase over the period, reaching 1,000 tonnes in 2017. This is more than double the figure for 2008.

Two categories of products were mainly exported to East Asia, and together accounted for 96% of all exports to the region: ethnic vegetables (including pumpkins, squashes and gourds) made up almost 80% of total exports. Fruit juices accounted for about 16% of the total flow to the region.

The destinations for horticultural products from the ACP-Pacific countries changed compared with

Figure 36: Trend of horticultural products exported by ACP-Pacific countries to East Asia (2008–2017) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)

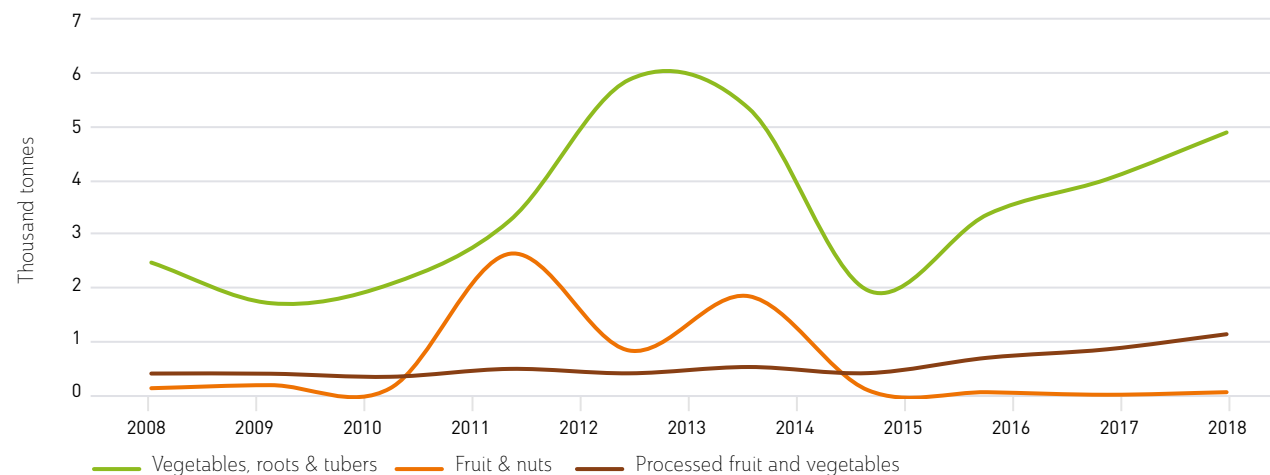
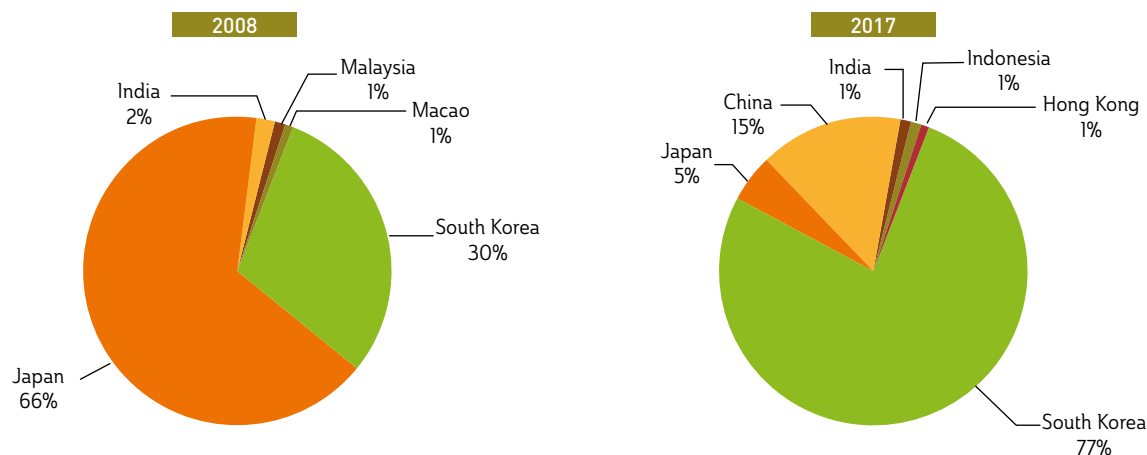


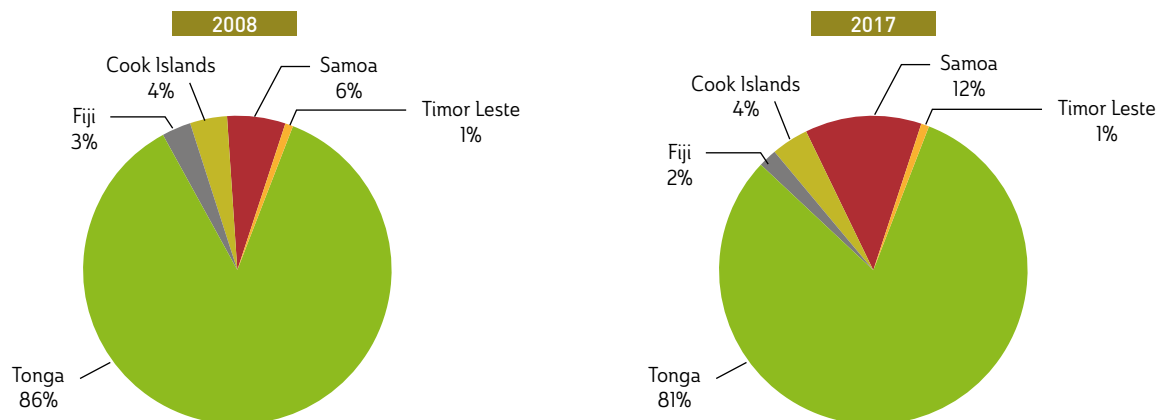
Figure 37: Destinations and percentages of export of horticultural products by ACP-Pacific countries to East Asia (2008 and 2017) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)



the preceding decade. South Korea became the leading destination for exports, followed by China. The shares of horticultural products exported to this market during the period were vegetables, 80%; fruit and nuts, 1.4%; and processed fruit and vegetables, 18.8%.

The trend of China emerging as the second most important export market in the region could be traced to the fact that China became Fiji's second-largest overall trading partner, after Australia. Also, China is currently the largest source of foreign investment in Fiji.

Figure 38: Origins and percentages of export of horticultural products by ACP-Pacific countries to East Asia (2008 and 2017) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)



5.4.2 Export to North America

Exports from ACP-Pacific countries to North America came mostly from Fiji. Samoa also gained partly from this market. The total volume exported from the ACP-Pacific countries to the North American market was 5,226 tonnes in 2017. The market share of vegetables, roots and tubers was 59%; that of fruit and nuts 1%, and that of processed fruit and vegetables 40.2%.

The ACP-Pacific countries' exports to North America were in similar proportions to their exports to East Asia. The distribution in the products differs, however, with a higher proportion of processed fruit and vegetables and less fresh vegetables (Figure 39). The export volume of fresh vegetables in 2017 was similar to that of 2008, about 3,000 tonnes. There was a sharp fall between 2009 and 2015 before rising again thereafter - vegetables were on a positive trend during the latter parts of the study period. Exports of processed horticultural products doubled over the period, reaching 2,000 tonnes in 2017, with a peak of 2,500 tonnes in 2016. Fresh fruit exports to North America remain very low.

The vegetables exported to North America were mainly roots and tubers, which accounted for 55% of horticultural products exported to the region. Processed fruit and vegetables preserved in syrups, or canned, and fruit and vegetable juices also represented important products exported to North America, accounting for about 18% of total exports. The destination was almost exclusively the USA (Figure 40). The main exporting ACP-Pacific country to North America is Fiji, which also re-exports products from other ACP-Pacific countries. Another important source of exports to the North American market is Samoa (Figure 41).

Figure 39: Trends of horticultural products exported by ACP-Pacific countries to North America (2008–2017) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)

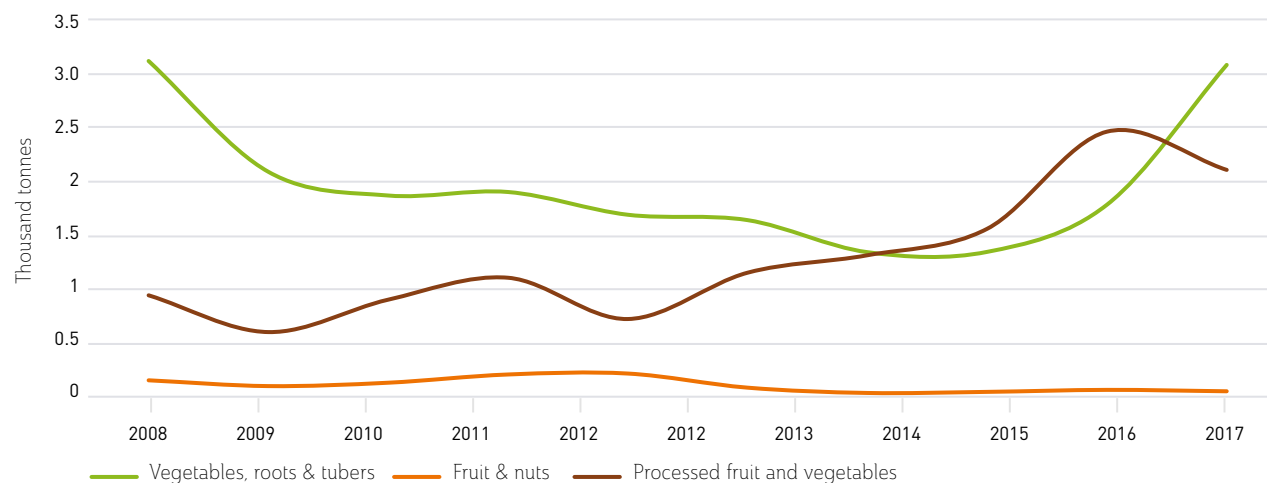


Figure 40: Destination and percentage of export of horticultural products by ACP-Pacific countries to North America (2008 and 2017) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)

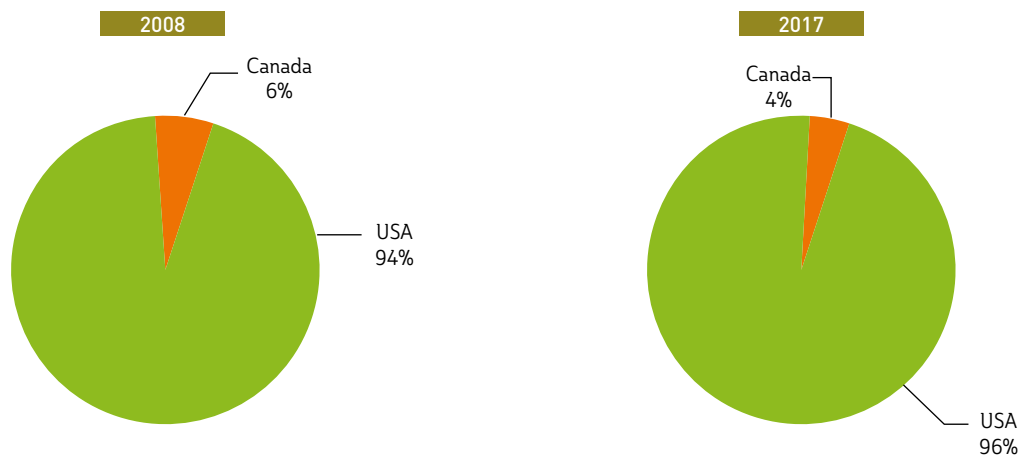
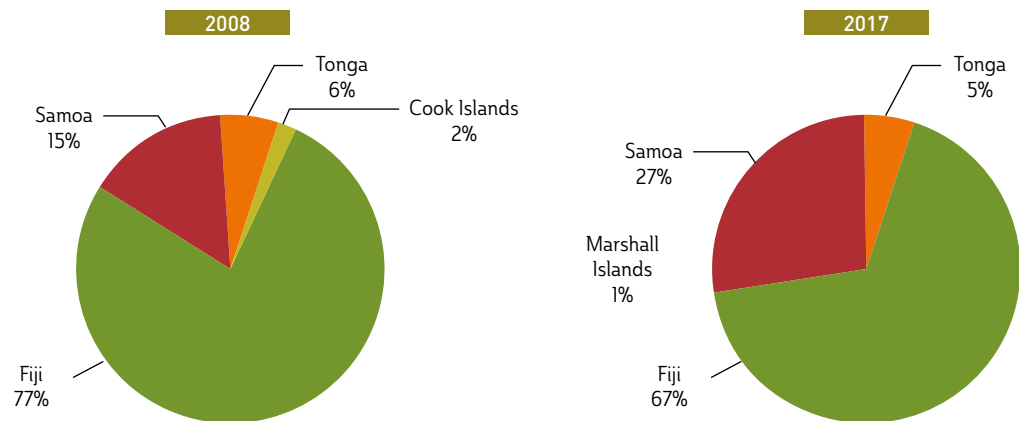


Figure 41: Origin and percentage of export of horticultural products by ACP-Pacific countries to North America (2008 and 2017) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)



5.4.3 Export to the EU28

The volume of horticultural products exported by ACP-Pacific countries to the EU28 market was much less compared with that to East Asia or North America. This may be due to the geographical distance from the European continent, limiting exports and competition on the European market. The volume exported to the EU28 market was 274.8 tonnes in 2019 (Eurostat, 2021). Germany and the Netherlands received most products from Fiji and Samoa. The majority of products exported to the EU28 market were processed fruit and vegetables.

From 2013, vegetable exports to the EU were very low. Processed horticultural products gained some market share, but the volume of exports fell sharply in later years (Figure 42).

In 2019, exports to the European market were made up of processed products, mainly nuts and fruit juices. Each commodity accounted for more than 40% of horticultural exports to the EU but represented low volumes. The situation was different in 2008, when there were more exports. The UK market's share dropped dramatically, while the share of Germany more than tripled (Figure 43). Also, the shares of the ACP-Pacific countries exporting to the EU28 changed: Fiji and Tonga led the exports in 2008, but this changed to Samoa and Fiji by 2019 (Figure 44).

Figure 42: Trends of horticultural products export by ACP-Pacific countries to the EU28 (2008–2019) (Source: COLEACP based on Eurostat, 2021)

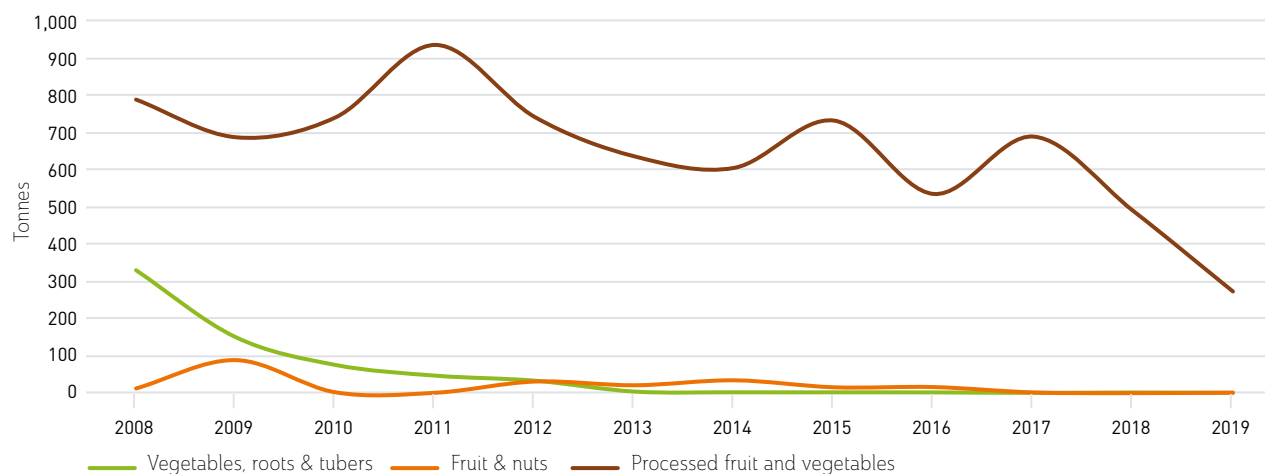


Table 18: Volume of horticultural products exported by ACP-Pacific countries to the EU28 (2019)

Commodity	Exports 2019 [tonnes]	Percentage of total exports to the EU28
Vegetables, roots and tubers	0	0%
Fruit and nuts	1.4	0.5%
Pawpaw/papaya	1.4	0.5%
Processed fruit and vegetables	273.4	99.5%
Other fruit and nuts	119.8	43.6%
Single juices (other fruit/vegetable)	112.6	41.0%
Products preserved by sugar	33.2	12.1%
Vegetables (acid preserved, excluding cucumber and gherkin)	5.7	2.1%
Single citrus juice (excluding orange and grapefruit)	1.1	0.4%
Asparagus	1.0	0.4%

Source: COLEACP based on Eurostat (2021).

Figure 43: Destinations and percentages of export of horticultural products by ACP-Pacific countries to the EU28 (2008 and 2019) [Source: COLEACP based on Eurostat, 2021]

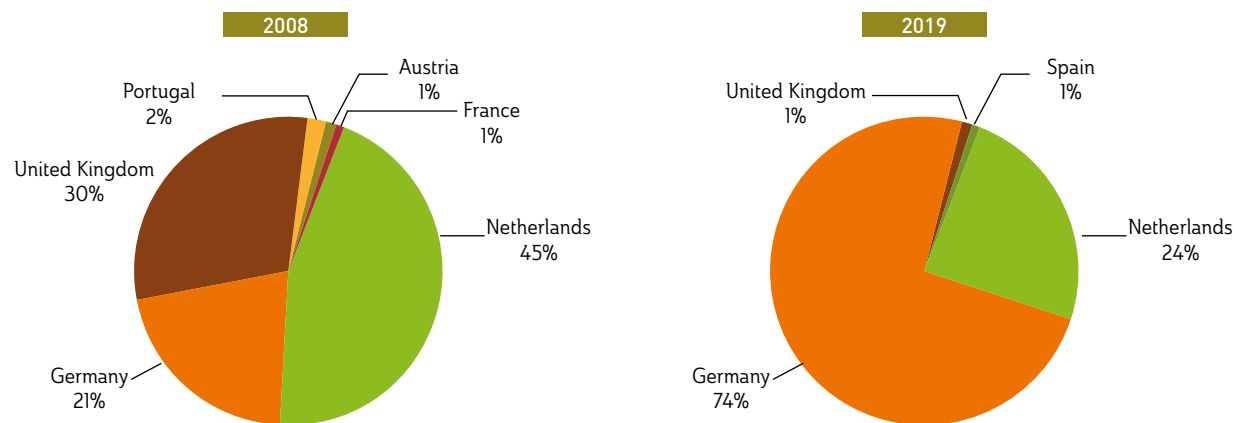
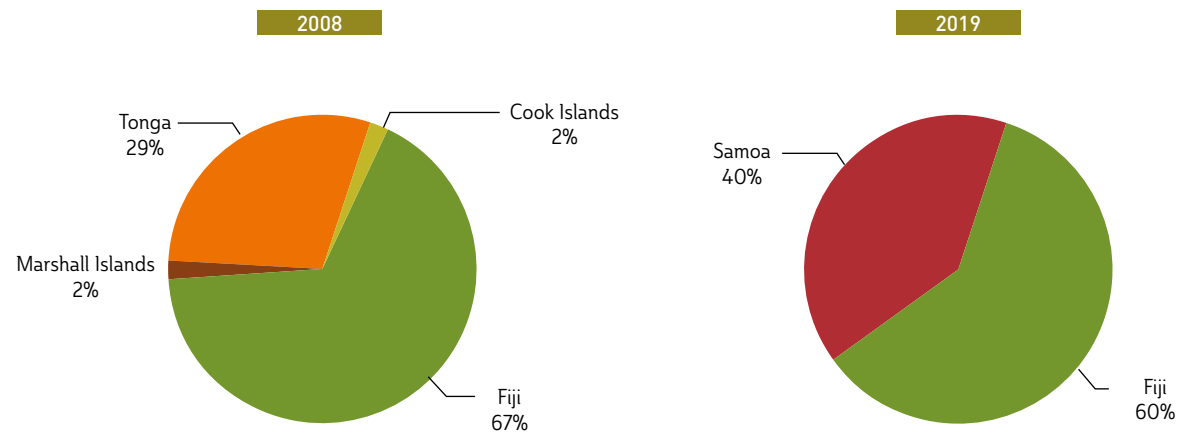


Figure 44: Origin and percentages of export of horticultural products by ACP-Pacific countries to the EU28 (2008 and 2019) [Source: COLEACP based on Eurostat, 2021]



5.5 Specific market segments for exported commodities

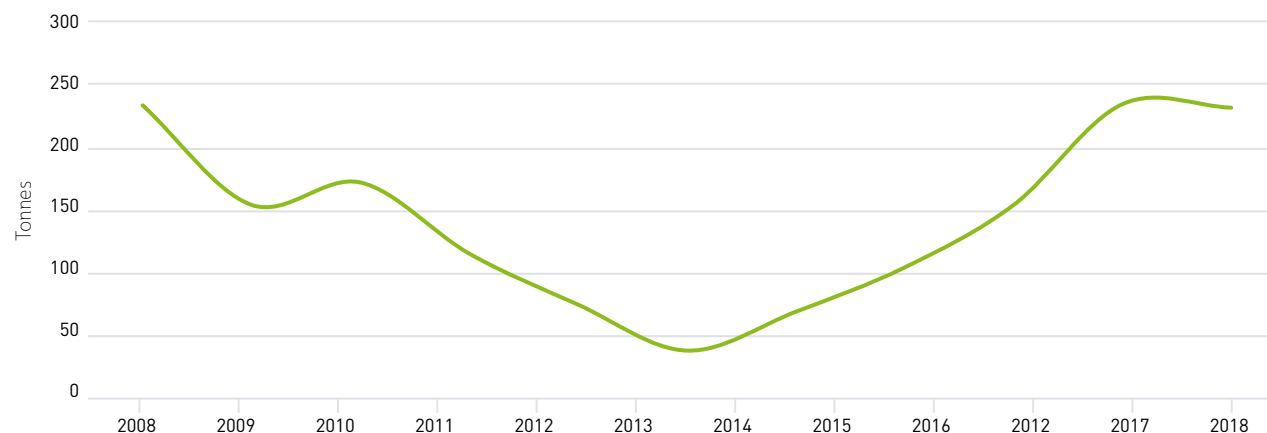
5.5.1 Vanilla

Two main species of vanilla are grown in Papua New Guinea and Tonga (*Vanilla tahitensis* and *V. planifolia*) that are exclusively targeted at the export markets. Vanilla exports from ACP-Pacific countries followed a similar trend in the preceding decade to the decade under study. Between 2008 and 2018, there were significant fluctuations with a clear decline from 2008 to 2013 before rising again up until 2017 (Figure 45).

ACP-Pacific countries seem to have shifted away from more distant markets with their vanilla exports, resulting in a decline in exports to the EU28 and US markets. There was also a significant decline in exports to Australia, which is a major trading partner for ACP-Pacific countries (Figure 46).

Most vanilla exports from the ACP-Pacific countries were destined for Indonesia, which accounted for 58%. Indonesia is a major producer and exporter of vanilla and acts as a hub for lower grades from Papua New Guinea, which is the region's leading exporter and one of the world's leading producers. Tonga is the second most important producer (although dwarfed by Papua New Guinea) (Figure 47), and mainly exports directly to the USA or indirectly via New Zealand where Tongan vanilla beans are processed and re-exported to international markets. Based on the trade data that were available to COLEACP, Tonga's share of ACP-Pacific vanilla exports fluctuated over the years: representing 8%, 17% and 12% in 2009, 2011 and 2013, respectively. However, over the latter 5 years (of the decade under study, i.e. 2014-2018) vanilla exports from Papua New Guinea seem to

Figure 45: Trends in volume of vanilla export by ACP-Pacific countries to the rest of the world (2008–2018) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)



have grown almost exponentially, while Tongan exports remained stable. This resulted in Tonga's share of the export volume not reaching more than 5% of the total ACP-Pacific countries' vanilla exports since 2014.



Figure 46: Destination and percentages of vanilla export by the major ACP-Pacific exporting countries (2008 and 2018) [Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries]

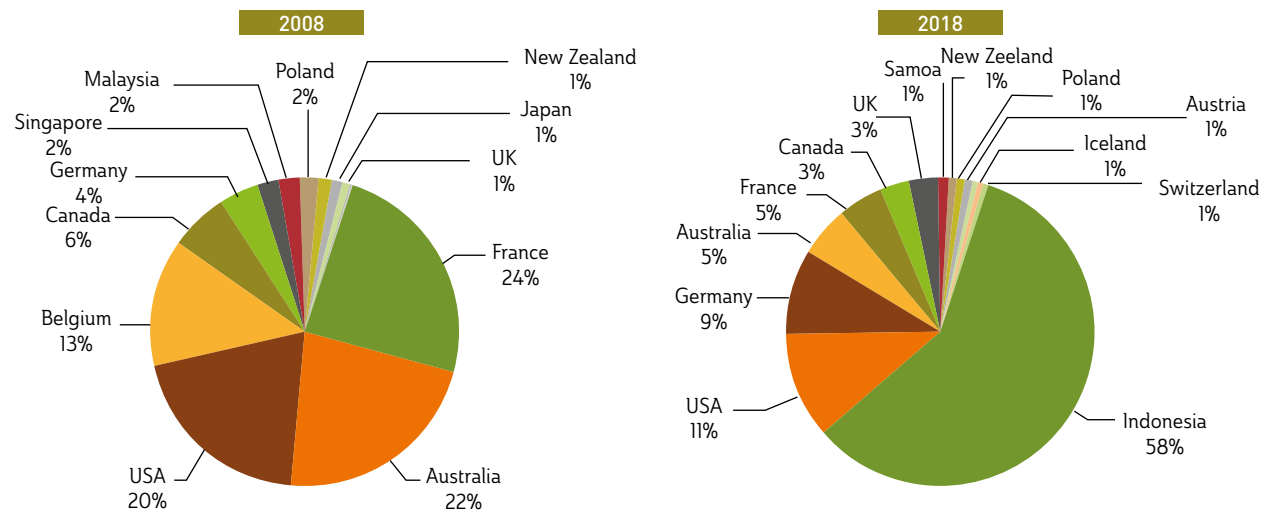
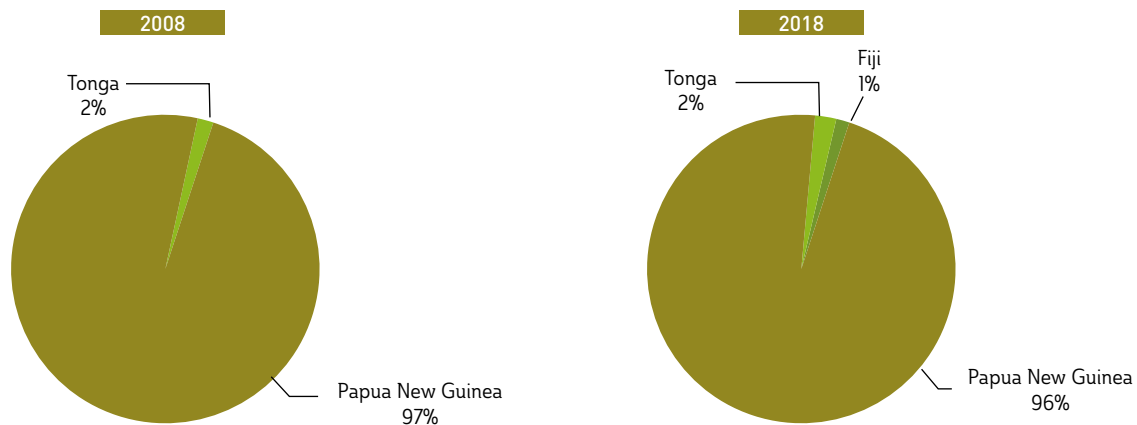


Figure 47: Origins and percentages of vanilla export by major ACP-Pacific exporting countries (2008 and 2018) [Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries]



5.5.2 Ginger

Ginger exports are rather irregular but saw some succession of peaks and troughs during the decade under study. In 2019, ginger exports were in a trough and recorded their lowest level in 10 years, with only about 1,000 tonnes exported by Fiji, which is the main ginger exporter. In comparison, the export figure for 2015 was 3,300 tonnes - a very prolific year for ginger exports - but dropped rapidly the next year (Figure 48).

The demand for ginger from Fiji became especially high in North America. Fiji could only meet relatively low volumes of this demand, as it exported less than 1% of the demand. This is an opportunity to develop the production of ginger to meet this high demand. There is also a consistent demand in Europe, with the Netherlands being the main importer (Figure 49). According to data available for ACP-Pacific countries' exports of ginger, Fiji dominated in 2008 (99.9% of the total volume) and 2019 (99.2%).



Figure 48: Trend in ginger export by Fiji (2008–2019) (Source: COLEACP based on Fiji Bureau of Statistics)

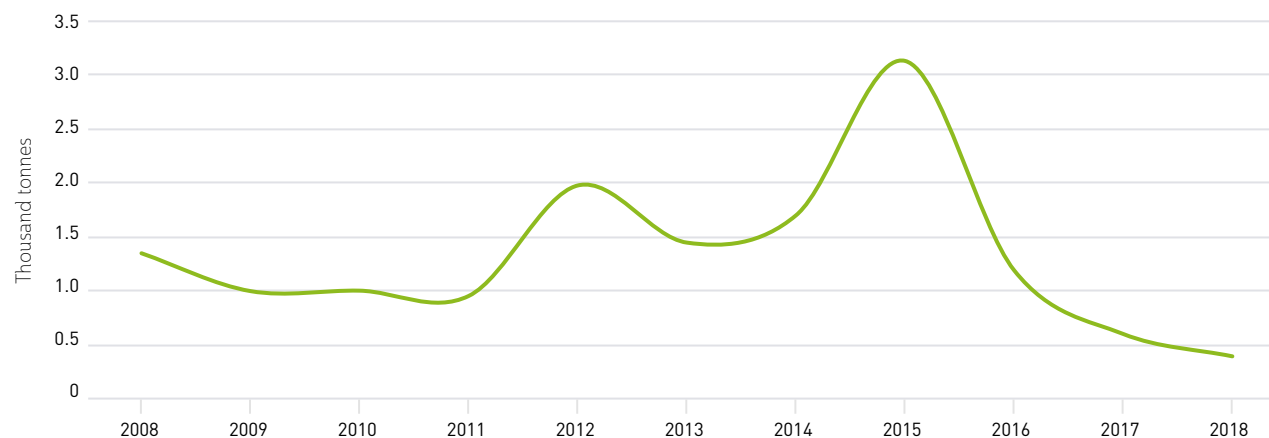
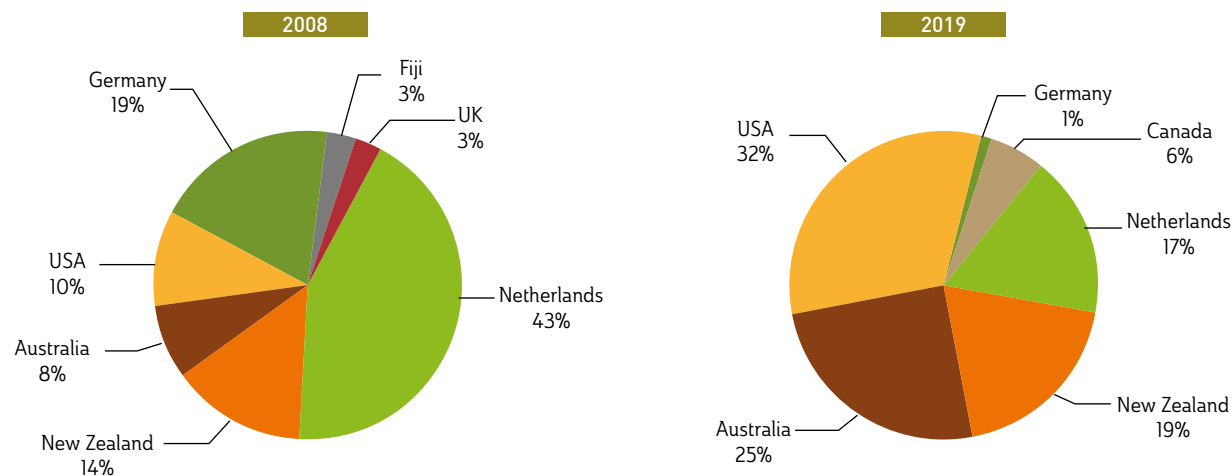


Figure 49: Destinations for ginger export (fresh and processed) from Fiji (2008 and 2019) (Source: COLEACP based on Fiji Bureau of Statistics)



5.5.3 Copra

Like vanilla, exports of copra from ACP-Pacific countries experienced a significant decline from 2008 to 2013 before rising until 2017 when it began to drop again (Figure 50).

During the period under study, Papua New Guinea strengthened its position as the main copra producer and exporter among the ACP-Pacific countries. In 2018, it exported 70% of the total copra volume. In addition to Papua New Guinea, the main copra exporting countries from the region - Solomon Islands, Vanuatu and Kiribati - did not change during the studied period. Remarkably, Papua New Guinea increased its exports from 48% in 2008 to 70% in 2018. This resulted in both Solomon Islands and Vanuatu reducing their export volumes, while Kiribati maintained its export volume at 3% (Figure 51).

As regards the destination for copra exported from ACP-Pacific countries, the Philippines remained the major market and increased its share from 84% in 2008 to 92% in 2018 (Figure 52). Exports to Australia decreased; the trend shows a decrease up until 2013 before recovery in recent years, giving hope to ACP-Pacific countries, as copra is one of their main export products. In terms of volume, copra exports in 2018 were more than six times the total volume of fruit and vegetable exports of the APC-Pacific countries.

Figure 50: Trend in copra exports by ACP-Pacific countries (2008–2018) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)

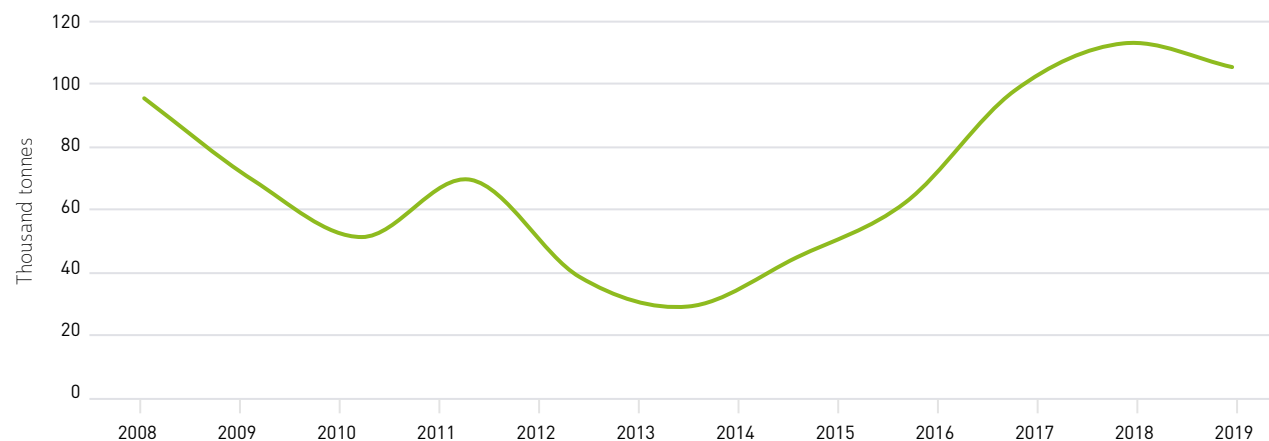


Figure 51: Origins and percentages of copra exports by ACP-Pacific countries (2008 and 2018) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)

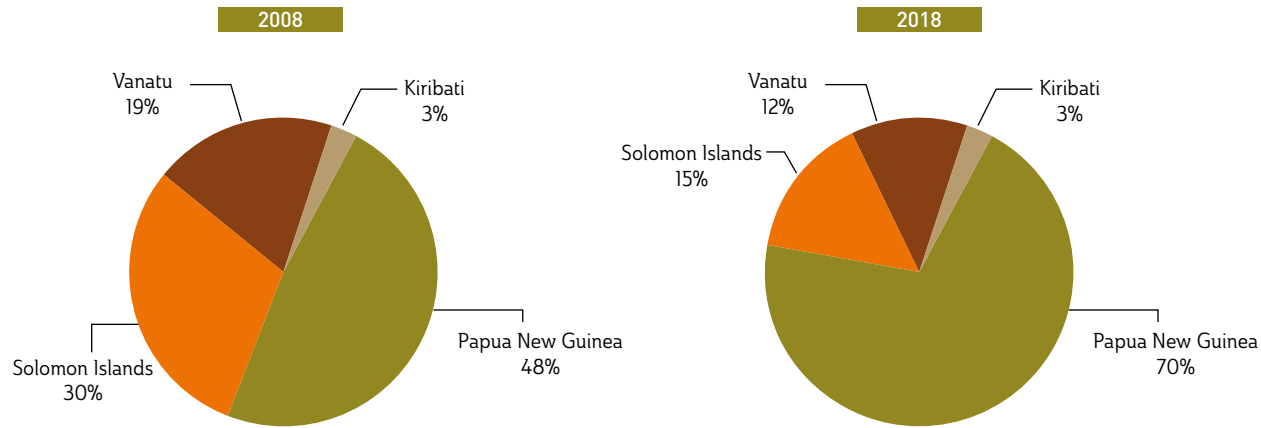
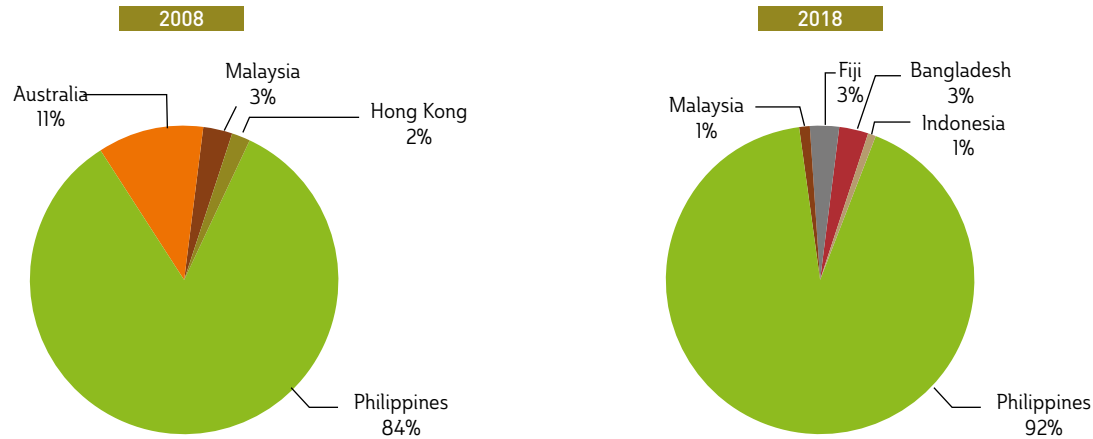


Figure 52: Destinations and percentages of copra exports by ACP-Pacific countries (2008 and 2018) (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)



5.5.4 Organic fruit and vegetables

Organic fruit and vegetables from the ACP-Pacific countries were meant to meet two distinct demands: local demand for the tourism and young and urban population and to contribute to regional demand mainly as exports to Australia and New Zealand. Most of the organic products were exported to the regional developed markets of Australia, New Zealand and New Caledonia. Some specific organic products were also exported to international markets.

Another development for the market for organic fruit and vegetables was the continuous growth in local demand. The domestic markets for organic fruit and vegetables faced some obstacles, however. A typical case was where organic fruit and vegetables were sold as conventional products without taking their status into account to obtain a premium price. These limitations can be compensated with the increasing demand from tourists who place premiums on organic products for healthier living.

5.6 The ACP-Pacific countries' food trade imbalance

The ACP-Pacific countries have a heavy food trade imbalance, the value of their imports being significantly higher than that of their exports. The result is that most ACP-Pacific countries operate a substantial trade deficit, partly because they rely on imported commodities and their associated high transportation costs.

Putting the value of both the imports and exports in US dollars side-by-side, and following the trend

between 2002 and 2018, imports continued to grow steadily with slight dips and rises in some years until 2016 when they began to fall rapidly (Figure 53). Exports during the same period remained lower than imports, but with the gap between them increasing, and only a slight reduction in the gap in 2016 when the value of imports started dropping. The value of exports from the ACP-Pacific countries also began dropping during the later years of the study.

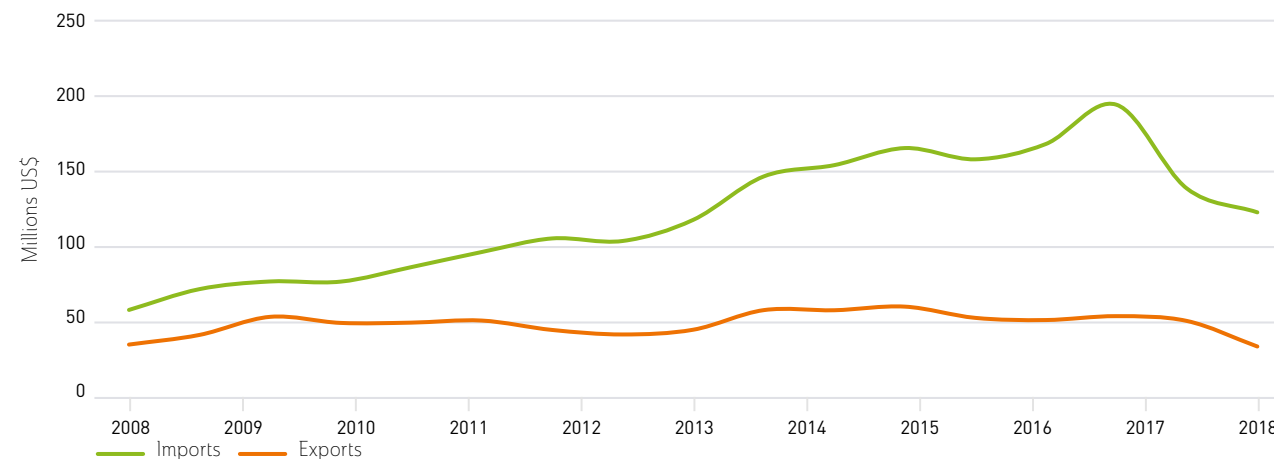
5.7 A heavy trade imbalance, but...

The ACP-Pacific countries have a heavy food trade imbalance, the value of their imports being

significantly higher than that of their exports. Most of the ACP-Pacific countries operate a substantial overall merchandise trade deficit, partly because they rely heavily on imported commodities and their associated high transportation costs. Nevertheless, the ACP-Pacific countries also export some fruit and vegetables and their derivatives to outside markets. Taking the main economic blocs of the world, the bulk of the export trade is concentrated within the Oceanic region, where Australia and New Zealand make up the major destinations for fruit and vegetable products coming from the ACP-Pacific. Other regions of the world that receive significant quantities of ACP-Pacific fruit and vegetables and their processed products are East Asia, North America and the EU28.

The ACP-Pacific countries' exports to North America and to East Asia are proportionately

Figure 53: Trends of import and export values for ACP-Pacific countries for horticulture products (fruit, vegetables, processed fruit and vegetables) between 2002 and 2018 (Source: COLEACP based on IFPRI, CEPII BACI, national statistics of ACP-Pacific countries)



similar. The shares of the ACP-Pacific countries' exports to the EU28 changed during the decade under study: while Fiji and Tonga led in 2008, it was Samoa and Fiji by 2018.

The top 10 commodities traded in the regional market were mixed juices (fruit/vegetable), potato (fresh, frozen and processed), mixtures of vegetables (frozen), nuts and other seeds (excluding groundnut), groundnut, tomato, cassava, ethnic roots and tubers, watermelon and pineapple. Products mainly traded on the international markets, however, saw some diversity. Exports comprise a higher proportion of processed fruit and vegetables and less fresh vegetables.

Copra is an important export commodity for the region, with Papua New Guinea leading exports. The share of Papua New Guinea's exports of copra among the ACP-Pacific countries increased from 48% in 2008 to 70% in 2018. Solomon Islands, Vanuatu and Kiribati also have significant exports of copra. The majority of copra exports from ACP-Pacific countries goes to the Philippines, increasing from 84% of ACP-Pacific copra exports in 2008 to 92% in 2018. A market opportunity exists for copra by processing it in the region for added value, similar to other high-value products such as virgin coconut oil.

Vanilla exports from the ACP-Pacific countries remained almost the same as the previous decade, with significant fluctuations between 2008 and 2018. Another important spice with high demand in Asian countries is ginger, but ACP-Pacific countries were able to meet less than 1% of this demand. From the available trade data, ginger exports from ACP-Pacific countries were dominated by Fiji in both 2008 and 2018.





6

MARKET OPPORTUNITIES FOR SELECTED HIGH-VALUE HORTICULTURAL PRODUCTS

6.1 Support for market opportunities

This section looks at the various market segments available for the ACP-Pacific horticultural products and the opportunities they offer for the horticultural sector. It also considers the support that is available and how it is being developed with the aim of achieving a better and improved horticultural sector for the ACP-Pacific countries.

Support from the public sector for ACP-Pacific fruit and vegetable producers and exporters to access export markets at regional and international levels is critical. This support can originate from the export markets or the ACP-Pacific countries.

Support from the public sector for ACP-Pacific fruit and vegetable producers and exporters to access export markets at regional and international levels is critical. This support can originate from the export markets or the ACP-Pacific countries.

Foreign direct investment support could be the first step towards enhancing trade relations between the destination countries of interest and the ACP-Pacific countries. For example, the Pacific Horticultural and Agricultural Market Access Plus Program (PHAMA Plus) was created to ensure that higher production volumes from the ACP-Pacific countries meet the sanitary requirements in Australia and New Zealand by financing specific activities. A

trade fair is organised every year in New Zealand to promote products from the ACP-Pacific countries to link local Pacific producers with potential New Zealand buyers.

Alternatively, local support can help Pacific farmers and exporters to develop their businesses by investing in export trades. A successful example is the case of Nature's Way Cooperative (NWC) (Fiji) Limited, which shows how a partnership between the Fijian public and private sectors has boosted exports of locally grown fruit and vegetables (Box 1).

Another area where support can be given is to establish trade opportunities that can investigate various niche markets susceptible to exploit local

Box 1

An example of the impact of a public-private partnership on the development of horticultural trade

Nature's Way Cooperative (NWC) (Fiji) Limited was established in 1995 following the 1990 ban on the quarantine treatment ethylene dibromide. Under the Bilateral Quarantine Agreement (BQA), Fijian fruit fly host fruit and vegetables can only access export markets in Australia and New Zealand if they have undergone mandatory quarantine treatment. To safeguard Fiji's horticultural export markets, the Fijian industry and government acquired a new quarantine technology, high-temperature forced air (HTFA) treatment, which NWC was mandated to conduct. NWC is currently the only entity in Fiji that provides a quarantine treatment facility for four fruit fly host products, namely papaya, eggplant, breadfruit and mango.

As a farmer cooperative, NWC opens the gate of export markets to farmers who have neither the

financial means nor the infrastructure to conduct such treatment on their own. Most of NWC's 260 shareholders are small-scale farmers. Its success lies to a great extent in the initial public-private sector partnership, which also contributed to NWC becoming the de facto representative of the Fijian horticultural export industry vis-a-vis the Fiji government, donors and various organisations.

Twenty-five (25) years after its establishment, NWC has become an important agribusiness with a wide range of services, including providing treatment, grading and packaging for fruit and vegetables. This variety of services is a major asset for NWC, as it is an incentive for all actors of the Fijian exports supply chain, namely farmers and exporters, to become cooperative members. Indeed, NWC enables farmers to treat and pack their fruit and



vegetables after harvesting before exporting them or before the farmers sell them to exporters.

NWC is also engaged in research and extension work to help farmers and exporters address some of the challenges affecting the production of papaya, eggplant, mango and breadfruit. As a cooperative, NWC, farmers and exporters can apply directly for the research work. This has been a successful way of working, as all the stakeholders along the value chain can benefit from some level of training. NWC is also involved in a certified seed scheme and organic papaya production, provides extension services and exclusively developed the retail network of Fiji Red papaya Certified Seed.

potentially exportable products. Data generation and analysis to provide relevant information should be an integral part of this kind of support. This is an especially interesting opportunity for the ACP-Pacific countries. Traditional products such as spices, virgin coconut oil, noni juice, and other organic fruit and vegetables can be considered for special market opportunities. Kava exports also present an opportunity since its general export ban has been lifted with its addition as a beverage to the *Codex Alimentarius* list by FAO in October 2020 (Codex, 2020).

6.2 Market, promotion and prices for selected high-value products

Fruit and vegetables produced locally in the ACP-Pacific countries are mostly sold in domestic fruit marketplaces, on roadsides, in local supermarkets, or directly at the farm gate (where they are usually collected by cooperatives, non-governmental organisations or private

businesses for export). However, most of the fresh fruit and vegetables supplied by the local supermarkets and resorts are imported.

The promotion of spices, however, is more segmented. For example, vanilla and fresh Fijian ginger are mainly produced for the export market, while some other spices are mainly sold on the domestic markets. These include the less costly spices such as pepper and cardamom, and also the spices that were targeted for the export market but could not be exported due to production or logistical constraints.

With the onset of social media and other digital platforms, the use of Instagram, Facebook and other similar platforms are emerging as marketing tools to enhance the promotion and sale of fruit and vegetables. In some cases, mobile applications have been developed to promote the sale of fruit and vegetables. An example is the Maua application in Samoa, launched in 2019, which is showing dynamism in the promotion of fruit and vegetables. This application gives better access to several products beyond fruit and vegetables, so that

potential buyers can be reached, even those far away from the marketplaces.

The price of locally produced fruit and vegetables depends on the market where they are sold. On the domestic markets, the price of local horticultural products usually depends on the market forces of demand and supply which are driven by seasonal production and therefore subjected to price fluctuations. Usually, prices for local fruit and vegetables are high during the wet or rainy season as their supply becomes scarcer, but dips during the cool or dry season that is usually experienced in August and September with increased supply.

The issue of price is more delicate in the export markets that are very competitive in terms of the types and varieties of products supplied, quality and, to some extent, target destination. In general, fruit and vegetables produced in ACP-Pacific countries face several constraints that are reflected in their inability to compete favourably on international markets. Other challenges such as the geomorphology of ACP-Pacific countries are seen as impediments to the development of



fresh food exports. The isolation of some countries implies longer shipping time. As a requirement, even if fresh fruit and vegetables are being exported to the regional markets of New Zealand and Australia, they have to comply with the sanitary and phytosanitary (SPS) documentation. This is very difficult for fresh fruit and vegetables, but easier for roots, tubers and coconut.

Pricing of fruit and vegetables in ACP-Pacific countries is segmented on the basis of several factors, including the product (fruit, vegetable, nut or spice), location, and type of market (domestic, regional or international). For high-value spices,

such as vanilla and fresh Fijian ginger, even at low prices, they are too expensive for the majority of the local Pacific consumers. They are increasingly sold indirectly to tourists through hotels and resorts. Other, less-expensive spices, such as pepper and cardamom, are sold on domestic markets.

One way for ACP-Pacific horticultural producers to overcome the export challenges of fresh fruit and vegetables and become more competitive in the export market is by investing in their processing. Adding value to fresh fruit and vegetables through processing by the ACP-Pacific countries could also enhance their expertise and result in better prices.

This, however, requires investment in equipment and personnel training.

The Tongan export company Nishi Trading Company Limited took the initiative to invest in processing and in training farmers who supply produce to them as far back as the early 1970s, and is still in sustainable business. The company is making impacts on the local farmers and upgrading their facilities, including a packhouse to meet the international standard requirements (Box 2).

Box 2

An example of the impact of value-added pre-packed products on the development of trade and livelihood

This Tongan family-owned company started its business in the early 1970s and has since then diversified its activities. Its initial activity was to produce fruit and vegetables and supply them to the local market. It later started exporting Fruit and vegetables to regional markets (Samoa and American Samoa), as well as to international markets (New Zealand and Asian countries such as Japan, Korea, and China). Currently, Nishi Trading Co Ltd exports watermelons, squash, butternut, onions, and roots (potato, sweet potato, cassava) grown by local farmers and is committed to ensuring Tongan farmers receive fair prices for their products.

Over the years, Nishi Trading Co Ltd has expanded its production and export activities to imports and complementary services, including supplies of farm

inputs, food processing, and pest management service among others.

Nishi Trading Co Ltd's international success lies to a great extent in its food processing and manufacturing facilities. They have a packhouse that was designed to follow the Hazard Analysis Critical Control Point (HACCP) certification to comply with a world standard food safety system. Nishi Trading Co Ltd's packhouse is also the first Pacific facility with the Sea Container Hygiene System (SCHS) certification. It ensures that exports to Australia and New Zealand will be in containers with a robust contamination management system in place. Having an internationally certified facility is a major asset to ensure that international customers have trust in Tongan food products.



Nishi Trading Co Ltd has also developed a training centre specifically dedicated to farmers. The facility is used for Applied Research which is open to the public to improve the living standards of the people of Tonga. This is further supported by the Nishi Foundation, which is involved in various projects, including teaching students healthy eating habits, as well as renovating and building a playground for children at a local hospital.

The positive effects of Nishi Trading Co Ltd for the local community led the company to partner with the Pacific Islands Farmers Organisation Network (PIFON). The aim of the organisation is to connect farmer organisations to ensure financial freedom for sustainable livelihoods.

6.2.1 Ginger

Ginger is a spice appreciated around the globe for its flavour and medicinal properties. It grows throughout the year underground in sandy loam soils rich in organic matter and water. These soil conditions are particularly found in warm climates in tropical and subtropical areas, notably in Fiji. Ginger can be grown in agroforestry systems because it tolerates partial shade to about 25%. Thus, it is adapted to cultivation in coconut plantations, and among fruit trees or trellised crops such as bitter melon or beans. Another notable advantage of ginger production is that including it in intercropping systems diversifies the production and harvest period. The disadvantage of ginger production is its requirement for large land areas and relatively long growing period of 10-12 months. A further inconvenience of ginger production is that it is subjected to attack by several pests and diseases and therefore requires adapted management systems. As a labour-intensive crop, ginger is well adapted to home gardening and small-scale production.

Ginger can be consumed as a fresh spice, but can also be processed in various ways including drying, processed into crystallised forms such as syrup, essential oil, paste and nutraceuticals, or even mixed with other beverage products such as ale, wine, tea and coffee. It is used as an ingredient in several food preparations in bakeries, confectionery, sauces and condiments. Ginger is used as a herbal remedy for nausea, motion sickness, headache and cramps. It is particularly appreciated and imported by ACP-Pacific countries for its taste.

Fiji and Hawaii are the main ginger producers in the Pacific region. While Hawaiian ginger is known for its excellent quality, Fiji is well suited to producing



organic ginger. Local demand is increasing for organic ginger and thus there is some potential for this market segment.

Fijian ginger is mostly sold on the local and regional markets, exported especially to Australia. The Fijian ginger export market is also US-oriented from July to December, and the USA is the main importer of Fijian ginger. The development of this trade flow is supported by the Generalised System of Preferences (GSP), which benefits more than 3,000 Fijian products, including ginger. The challenge

posed by Fijian ginger exports to the USA is that it is grown at home in small-scale production. This limited production in volumes is more suited to meet local demand, especially from restaurants, hotels and the local population.

Ginger in general has a high market price, comparable to that of vanilla. Fresh ginger has the advantage of fetching higher prices than its processed form, but processed ginger entails less risk of food wastage. Processed ginger is adapted more to long-time storage and to the transport

system of the ACP-Pacific countries, which are highly dependent on sea freight. The ways of processing ginger include preservation, drying, being candied, crystallisation, and being added to beverages and cookie (biscuit) preparations. It can also be processed partly or fully into paste or powder. There is one Fijian producer of ginger paste (Spice Perfection) which exports the product to the UK market where demand is high.

Organic certification for ginger products is an added advantage that should be further investigated as a local product with opportunity for export by ACP-Pacific country producers. Such a premium product can be sold at higher prices to the gourmet food and health sectors. For example, organic ginger produced in Samoa is in high demand by local restaurants, resorts and the general population.

As detailed above, ginger can be traded in several forms. The packaging used for export depends on the form of the product meant for the market. For example, the natural (fresh) ginger is exported in

the same way as dried ginger in jute bags with a weight of 30–65 kg (depending on the requirements of the market). It is sometimes also packed in large wooden or cardboard boxes.

Sliced ginger and ginger powder are exported in multi-wall laminated bags with common weights of between 12.5 and 25 kg. Ginger paste is sold in smaller volumes and weights, as it requires larger volumes of natural ginger to be processed. This has made ginger paste an expensive product. Fiji's only producer sells ginger paste in jars of 500 grams or 1 kg; larger units of 5 kg and 10 kg are packed for specific markets.

To get an idea of prices, it is interesting to look at China, the main supplier of this product. Fresh ginger generally sells for USD 2,100 per tonne and dried ginger for USD 2,300 (FOB). However, the pandemic and the weather conditions, combined with the increase in demand, led to an increase in prices at the end of 2020 to around USD 2,800 and USD 3,100 per tonne respectively for these products. Prices have since returned to normal.⁵

In the local markets, the price for Fijian ginger has increased from US\$1.15 to over \$3.00 per kilogram since the beginning of the COVID-19 pandemic. Local consumption of ginger and exports to New Zealand and the US have increased in recent times. The barrier to export ginger to Australia is high. Fijian ginger can only be exported to Australia between December and January where it attracts higher prices between US\$ 2,000 and 2,200 per tonne. Fijian ginger paste produced by Spice Perfection was sold at US\$40.99 for 500 grams. Organic fresh natural ginger has a strong added value and can thus be sold at a premium price.

The COVID-19 crisis disrupted the production of ginger and led to global price rise. The price for Chinese ginger exports in April 2020 was US\$1,800 per tonne, an increase of about 1.8-fold above the price in April 2019.

Figure 54: Some packaging materials for ginger: a. jute bag, b. cardboard and c. multi-walled laminated bag [Sources: a. www.indiamart.com/proddetail/gunny-jute-bag-14813977430.html, b. www.virtualmarket.fruitlogistica.de/en/Organic-ginger,p1662683, c. www.indiamart.com/proddetail/multiwall-paper-sacks-17579723891.html]



a. Jute bag



b. Cardboard box



c. Multi-walled laminated bag.

Figure 55: Ginger paste in a tub and a jar [Source: <http://spiceperfection.com/product-range.html>]



⁵ FreshPLaza – Overview global ginger market (2020)

6.2.2 Vanilla

Vanilla is the second most expensive spice in the world after saffron. It is produced in only a few world regions, as it requires special climatic conditions, and the Pacific islands are fortunate to be one of those regions. The two main species that are well adapted to the Pacific region are *Vanilla tahitensis* and *V. planifolia*. The cultivation of vanilla does not require large areas of arable lands, but its production is labour-intensive, as the flowers have to be hand pollinated. It is thus suited to small farms.

Vanilla is essentially used in the food industry to enhance or even change the taste of food products. It is a major ingredient in famous global products such as cola. Besides its flavour, vanilla also has important nutritive values that remain and are sustained in final products when it is used in its natural form. Vanilla is also in demand in the cosmetic industry for its healing and soothing properties. When produced organically, the vanilla beans have high natural antioxidant effects, as well as anti-carcinogenic properties.

The US vanilla market mostly uses vanilla extracts for ice-cream production. The demand for vanillas in the European markets focuses on the natural beans: *V. planifolia* (also called Bourbon vanilla) is commonly used in extracts, while *V. tahitensis*, with generally thicker and shorter pods, tends to be used in niche market segments under the name “French vanilla”. *Vanilla tahitensis* is mostly grown in Papua New Guinea and Indonesia. The quality requirements for natural vanilla are high and result in high prices. Synthetic vanilla attracts only 1% of the price of natural vanilla.

Premium-quality beans are sold directly as vanilla pods, while lower-quality beans (shorter) are mostly used to produce the extract. The ACP-Pacific countries primarily export cured vanilla pods, which are processed at different levels of the supply chain. Vanilla pods are the end products of the curing process of vanilla beans that consist of developing the vanillin aroma and slowly drying the bean for conservation purposes.

Tonga and Papua New Guinea together account for nearly 10% of the world’s total production of vanilla. Conservation problems linked to inadequate infrastructure are no major concern for vanilla, as it becomes non-perishable once it is vacuum-sealed. This high-value- added product perfectly fits the storage and export challenges that are faced by ACP-Pacific countries.

The demand for **natural** vanilla has been increasing, although it is far more expensive than the artificial extract. This trend lies partly in the adverse effects (e.g. allergies) of chemicals used to process artificial vanilla. Increased awareness of the positive impact of natural and organic foods on health have made artificial vanilla less attractive. This offers an opportunity for the promotion of ACP-Pacific vanilla as a premium and ethical product for important market development strategies.

The demand for **organic** natural vanilla is also booming. The world organic vanilla market is expected to expand up to US\$ 950 million during the forecast period of 2019–2024. A compound annual growth rate (CAGR) of 13.3% is expected to be registered for this market by the year 2023⁶.

This increased demand is especially driven by the food industry, mainly for the production of dairy

and bakery products, as well as drinks. The use of vanilla for food and beverages is expected to grow by almost 12% between 2017 and 2023. Besides the food industry, organic vanilla beans are also in high demand for medicinal purposes. The demand for organic vanilla is expected to be greatest in Europe, followed by North America.

The production of organic vanilla does not require much additional investment than the production of natural vanilla. Vanilla orchards already grow in a chemical-free environment without making use of any pesticide or synthetic fertiliser. However, it requires regular top-up of dry organic matter, usually obtained from coconut husk. Africa is currently dominating the organic vanilla market with the main producers being Madagascar, Uganda and Comoros.



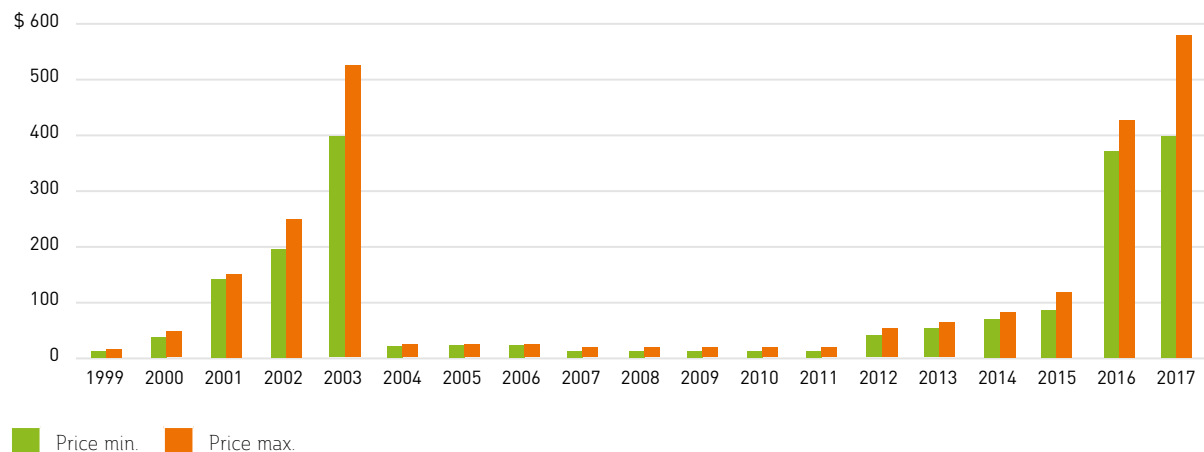
The price of vanilla fluctuates strongly, going from periods of deep troughs to peaks where its price reaches very high levels. In 2015, the price of bulk vanilla was US\$85/kg, while in 2018, it reached US\$600/kg, surpassing the price of silver. At the retail end, vanilla is usually sold in smaller consumer containers for €2.99/g (€2,990/kg).

Bulk vanilla beans are sold by the ACP-Pacific countries in bundles of 70-100 units, grouping beans of similar size. These bundles weigh between 150 and 200 grams. The bundles are either vacuum-packed in perfectly sealed and airtight packaging or grouped in tins or boxes covered with wax paper that contain between 20 and 40 bundles. While vacuum packaging is the cheapest and easiest method to trade bulk vanilla, great care should be taken to ensure that the vanilla beans are mature, perfectly dried and stabilised in the country of origin before being vacuum-packed. Not doing so will result in mouldy batches upon arrival at the clients. The use of commercial-model vacuum sealers is also advised.

Figure 57: Vanilla pods vacuum packed for export (Source: www.indiamart.com/kg-farmsflavours/products.html#gourmet-vanilla-beans-bulk)



Figure 56: Price trend of vanilla in US\$ per kg (1999–2017) (Source: Cook Flavoring Company, via New Zealand Institute for Pacific Research)



Gourmet beans, sold to the end-consumers, are usually packed individually or in small quantities either in flat packaging or in pots. Vanilla is

sometimes also traded in the form of powder, but this is a less popular alternative.

Figure 58: Dried vanilla pods (Sources: a. www.carrefour.fr/p/gousse-de-vanille-vahine-3179142056385, b. www.carrefour.fr/p/vanille-2-gousses-5g-cook-3417960037064?s=2136)



a. Dried vanilla pods sold in flat packaging in a supermarket



b. Dried vanilla pods sold in a pot in a supermarket

Figure 59: Vanilla powder sold in a supermarket (Source: www.rapunzel.fr/vanille-bourbon-bio-en-poudre-patisserie)



6.2.3 Turmeric

Turmeric is a tropical perennial herb from the ginger family. It is a spice used in the preparation of curry powder. Like ginger, the part of interest is the underground root. It grows in the wild in some of the ACP-Pacific countries and can be cultivated throughout the year. Turmeric takes between 6 and 10 months to mature from the time of planting to harvest. Again like ginger, turmeric grows best in sandy loam soils with high organic matter content.

Turmeric is a popular spice particularly used in curries. It is valued for its yellow phenolic pigment called curcumin, which is used as a natural colouring agent for food, cosmetics and dye. It is also used as an active ingredient in some medicines and cosmetics. Both curcumin and volatile oils of turmeric rhizomes enjoy a reputation for their anti-inflammatory, antimutagen, anticancer, antibacterial, antioxidant, antifungal, antiparasitic and detox properties.

There has been a rapid growth in the demand for organic turmeric and there is consequently an opportunity for increased production, predominantly in Fiji, but also in Samoa. In recent years, advantage has been taken of the space for growth in the health-complement industry. In this context, turmeric is sold more as a superfood, its health benefits being used as strong marketing arguments.

Turmeric is also used as a pigment or for its health benefits in the preparation of cosmetics. The demand for organic ingredients in these products is also growing, and organic turmeric production is taking advantage of this trend.

There are two different types of turmeric sold on the market, the food and pharmaceutical grades. In western countries, the majority of turmeric imports are meant for the food and spices industry. They are sold ground or as an ingredient for food or health-complement preparation, or in a more processed

form for the health industry, such as capsules, essential oils or extracts.

India is the largest producer of turmeric. Indian turmeric export prices are quite stable. It is generally exported in powder form at a price of US\$1.3-1.7/kg (FOB). In the future, prices are expected to fluctuate as a result of the bad weather experienced in India in 2019 and the COVID-19 pandemic. These changes will impact on the prices in other world regions, which could reach US\$3-4/kg (CIF)⁷.

Processed turmeric products have higher prices. The more they are processed, the higher the price. Turmeric capsules are usually exported at US\$60-100/kg (FOB). The prices for the extracts and essential oils vary according to their concentration.

Figure 60: Turmeric packed in different forms (Sources: a. www.farmaline.be/pharmacie/commander/be-life-biolife-curcuma-piperine-bio-60-capsules/?expa=gs&ev_chn=shop, b. www.herb-pharm.com/product/turmeric/, c. www.revolutionbeauty.com/intl/fr/soin/cr%C3%A8mes-hydratantes/revolution-skincare-calming-boost-moisture-cream-with-turmeric/1262873.html, d. www.sainsburys.co.uk/gol-ui/product/spices/sainsburys-turmeric-48g).



a. Capsules for joints and digestion



b. Turmeric essential oil for "system restoration"



c. Cosmetic cream for hydration and inflammation relief



d. Turmeric as a spice

7 CBI, 2021

6.2.4 Kava

Kava is a common name for *Piper methysticum*. Its name means “bitter” in the Tongan and Marquesan languages. Depending on the specific Pacific regional language, this crop is known as *awa* (in Hawaii), *ava* (in Samoa) or *yaqona* (in Fiji). It is believed that the origin of kava is the Pacific region, possibly Papua New Guinea or Vanuatu. It grows well in well-drained soils, humid atmosphere and partially sunny environments. These specific conditions limit it to a few areas, including Fiji, Micronesia, Samoa, Tonga and Vanuatu.

Kava is sought-after by the Pacific population for its sedative effects. Its derived products are only meant for personal and leisure consumption and not for any further industrial or processing purposes. The roots of kava contain kavalactones, which can be processed into drinks that have sedative, anaesthetic and euphoriant properties.

Kava can be prepared as a beverage by grinding the fresh roots and by physically extracting it in

water as the lipid kavalactone. An alternative method of preparing it is to emulsify the fresh or dried kava roots in starch and buttermilk to extract the kavalactone droplets. Processing kava to extract high amounts of kavalactones requires special solvents. Kava can also be consumed as pills. In October 2020, kava was added to the *Codex Alimentarius* by FAO as a beverage⁸.

Kava presents an opportunity, as it specifically meets healthy food requirements, of which there is increased awareness. The propensity of kava juice to combat anxiety, among its other health and pharmaceutical properties, is a strong marketing asset. Kava is mainly exported as dried roots before being processed into powder by the importing countries.

The final kava beverage is obtained by mixing the powder with water. Export of kava powder or juice is a remarkable trade opportunity for producers in the ACP-Pacific countries, given the possibilities of benefiting from the high added value of the

processed products. This value will compensate for the increased logistical costs of exporting processed products, but is a viable option, as the manufacturing process is neither too complex nor too expensive. Diversifying the product range by using different sorts of kava from different origins is also a way to acquire a better position in the kava exports market.

Besides the Pacific expatriates' demand for kava, which is essentially located in Australia and New Zealand, the US demand for the product is also increasing. It is estimated that there are over 185 kava bars in the USA. More than half of these are located in Florida. Moreover, since the European kava import ban was lifted in 2017, the EU28 offers new market opportunities.

However, the main challenge of kava export lies in the quality of the product for the market and its compliance with the various SPS and quality requirements. For the US market, the American Kava Association (AKA) assists and redirects kava producers to partner with laboratories to test their

Figure 61: Kava products [Sources: a. <https://specialtyproduce.com/sppics/13399.png>, b. https://cdn11.bigcommerce.com/s-8466dwhhq/images/stencil/2048x2048/products/718/942/kava_kava_powder_19-03-11__02364.1588715417.jpg?c=1, c. www.facebook.com/AoToA.kava/, d. www.indiamart.com/proddetail/white-polypropylene-bulk-bag-21462041788.html]



a. Kava roots



b. Kava powder



c. Kava chips



d. Polypropylene bulk bag

8 Codex, 2020

products. The development of certification systems and infrastructure in the ACP-Pacific countries is an interesting opportunity for local producers, as they could produce and process products destined for export markets by themselves. By exporting more processed kava products, ACP-Pacific producers will benefit from higher margins than those generated by exports of raw kava roots.

Kava in ACP-Pacific countries is focused on the export market. It is sold either in its natural form, such as roots, or processed, into powder or chips. The less the product is processed, the longer it is supposed to retain its properties. Roots and chips are exported in bulk in large bags.

Due to the COVID-19 pandemic and a significant drop in demand for kava from the US market, the price for kava from Fiji fell in 2020. While in 2019 a kilogram of ground kava cost between US\$130 and 150/kg, prices were in the range of US\$50–70/kg (FOB). In Vanuatu, the export price (FOB) is regulated at about €15/kg (or VUV2,000/ kg). It is being sold on the domestic market between

€11 and €23/kg. The price differences are partly explained by the market access of the two countries. The high Fijian price results from better marketing and access to the US market, while Vanuatu sells its kava to New Caledonia and Australia, where the product is less of a rare commodity.

On the other hand, the prices in importing countries, such as the USA and New Caledonia, have remained high. US importing company Kava Depot shows that kava powder continues to sell between US\$125 and US\$145/kg to the consumers. Several companies in Vanuatu sell their Kava powder in New Caledonia at a retail price of between €45 and €75/kg. The main driver for the price seems to be more related to the target market rather than quality.

Importers are creative in developing new kava products. In addition to the traditional powder sold by the kilogram, these companies also sell in smaller units such as 100 grams and also products in liquid form that are sold in litres and gallons.



Figure 62: More kava products (Sources: a, b, c. <https://kalmwithkava.com/shop/>; d, e, f. www.kavadepot.com/product/)



a. Powder of dried kava roots to be mixed with hot water and blended (US\$59 per pound (c.500 g))



b. Micronised kava as an instant powder (US\$27 per 4 oz (c.100 g))



c. Bottles of fresh kava juice and water (US\$46/litre)



d. Gallon jars of flavoured concentrated kava drinks (US\$210/gallon ~ about US\$55/litre)



e. Kava flavoured gummies (US\$24 for 24)



f. Kava extract with a high amount of kavalactones (70%) (US\$2,000/kg)

6.2.5 Virgin coconut oil

Coconut trees are grown in coastal tropical regions around the world. They need exposure to high levels of sunlight and regular rainfall to grow and are somewhat resistant to saline soils. Coconut trees can grow to a height of 30 metres and produce on average about 30 coconut fruit per year. Coconut is referred to as the “tree of life” because of how valuable it is: all parts of the plant - coconut water, flesh, husk and hard shells - can be transformed into useful items. The trees, if they are not affected by beetles or any other pests or diseases, can constitute very useful building material, while their flesh can be used for food, cosmetic or medicinal purposes and the husk used as fuel for domestic cooking.

Coconut is produced in large quantities in the ACP-Pacific countries and is of major economic importance for the region. The ACP-Pacific countries account for 50% of the market share for copra, which has a higher added value than fresh coconut. However, this economic dependency on copra makes the ACP-Pacific countries more vulnerable to the crop's frequent price fluctuations. A typical case is when the market price for copra fell significantly in 2018. As a result, the expected export income for Vanuatu dropped by 75%. This experience brought to the fore that the trade opportunities for coconut lie rather in the processing of copra into other higher-value products. Virgin coconut oil and organic certification for coconut products provide an opportunity to access the export markets.

Virgin coconut oil can be obtained by several methods, all of which require more work than processing into conventional coconut oil. The processing of virgin coconut oil requires the use of solvents to extract the oil from the copra. However, other processing techniques or methods also exist for extracting the virgin coconut oil. Some of the various methods that can be used to process virgin coconut oil are given in Table 19.



Table 19: Raw materials for virgin coconut oil

Coconut raw material	Virgin coconut oil production method
1. Fresh coconut meat	First method with two steps: <ol style="list-style-type: none"> i. Wet-milling or drying of the coconut meat ii. Extracting the oil with a screw press.
	Second method with two steps: <ol style="list-style-type: none"> i. Grating and drying the coconut meat ii. Extracting the oil with a manual press.
	First method requires squeezing out the oil from the coconut milk.
2. Fresh coconut milk	Second method with three steps: <ol style="list-style-type: none"> i. Fermenting the coconut milk for 36–48 hours ii. Removing the oil that is naturally separated from the milk during the process of fermentation iii. Heating the fermented cream obtained during step ii, to remove the remaining oil from it.
	The third method is by centrifuging (rotating at very high speed) the coconut milk to separate the oil from the other liquid.
	Extracting the oil from the dried coconut residue.
3. Dried coconut residue from the coconut milk production	

As all these processes involve extracting the virgin coconut oil at low temperatures, the yields obtained are lower than that of other types of oil that usually require the use of two press methods.

Virgin coconut oil is used in both the food and cosmetic industries. The oil has a particular type of saturated fat which is highly appreciated for its health benefits. Its use might contribute to inhibiting heart diseases and strengthening the immune system. Virgin coconut oil is used for cooking purposes, as baby formulas and for sports drinks. The greatest use of virgin coconut oil is, however, in the cosmetic industry as an alternative to palm oil to meet the growing need for all-natural, organic cosmetic and beauty products.

Virgin coconut oil is an example of a processed coconut product with growing global demand,

especially in North America and the EU28. The growth in demand is supported by industrial needs mainly from the cosmetics sector. A good example for the prospect for coconut products in the US market for the ACP-Pacific countries is the arrangement made by a US company named Dr. Bronner in 2016: this is a joint venture in Samoa for the production of coconut oil for the company, with the company in turn supporting the farmers in their conversion to organic production. The details of this success story are presented in Box 3.

Virgin coconut oil has a higher added value than copra. It is estimated that the selling price of virgin coconut oil produced from 100 coconuts is 2 to 3 times higher than the selling price for copra made from the same number of coconuts. Virgin coconut oil can be transported as liquid in general cargo, but

the temperatures need to be controlled to keep the oil in liquid form and enable it to be pumped out of the tanks at the destination.



Box 3

How organic coconut oil revitalised the Samoan coconut industry and economy

Dr. Bronner's is an American soap brand specialised in organic production. In 2016, Dr. Bronner's entered into a joint venture in Samoa and invested in the creation of a fully Fairtrade and organic value chain for coconut. By doing so, Dr. Bronner took advantage of the opportunity to produce coconuts in Samoa, as well as to increase the know-how of the local farmers to produce coconut oil. Since then, Fairtrade and organic coconut oil has been produced and exported by the Samoan company **Serendi Coco Samoa**.

This partnership benefits both the local producers and Dr. Bronner's, as the US company relied on

the local farmers' experience while supporting them in organic conversion (following a dynamic agroforestry model). This organic production boosted the Samoan coconut output, which had been declining since the 1990s. By 2017, some 1,000 Samoan farmers had been trained and obtained US organic certification. This revival of the coconut oil industry stimulated the Samoan economy, as organic coconut exports are on the rise and the sector provided an important source of employment.

Dr. Bronner's' investments also had a long-term positive impact in Samoa. With the support of

various institutions and organisations, the company launched a project for replanting coconut trees. This aims at compensating for the declining yields of coconut trees planted mainly during the colonial period. The new coconut plantations are based on an agroforestry model. Thus, while boosting coconut production and yields, they were also improving the quality of the soil and supporting biodiversity. The agroforestry models enable the parallel production of other crops such as cocoa and fuel wood. The revitalised coconut sector in Samoa was designed to remain prosperous in the years to come.



As demand grows for virgin coconut oil in the industry, it is important to provide products that are suitable for the sector. Bulk packaging is still in drums, as these are preferred to smaller containers. European industrial buyers usually require virgin coconut oil in large plastic or steel drums that contain approximately 200 litres. However, buyers may have their own preferred packaging requirements, so it is important that the producers investigate these. The packaging of virgin coconut oil sold in retail shops includes bottles, jars and pouches.

Figure 63: Virgin coconut oil in packaging for bulk transporting (Sources: a. [https://ashaby1.wordpress.com/2017/03/Pictures by Brian Shilhavy](https://ashaby1.wordpress.com/2017/03/Pictures%20by%20Brian%20Shilhavy), b. <https://cleanitup.com/keys-to-using-paper-ibcs/>)



a. Trunk transporting liquid coconut oil



b. Paper intermediate bulk containers with a liner for liquids transport



Figure 64: Plastic and metal containers preferred by European buyers for virgin coconut oil (Source: www.cbi.eu/market-information/vegetable-oils/virgin-coconut-oil)



a. Bottle of virgin coconut oil



b. 1-litre jars of virgin coconut oil



c. 300-ml virgin coconut oil pouch

Figure 65: Virgin coconut oil packed in bottles and pouches (Sources: a. www.kpsi.com.sb/retailed-packs.html, b. <https://cocofiji.com.au/product/coconut-oil-3-x-1-litre-jar/>, c. www.rhtradingpng.com/shop/niugini-vir-cocoil-pouch-300ml/)

6.2.6 Noni juice

Noni is the common name for the fruit from the *Morinda citrifolia* tree. The plant belongs to the coffee family (*Rubiaceae*). Noni is commonly present in South-East Asia, Australia and in the ACP-Pacific countries. The noni fruit-bearing tree grows in shady forests, or in open rocky or sandy shores. The plant is capable of resisting saline soils and tolerating drought conditions. It is these traits that make the noni plant particularly well adapted to the Pacific region. Noni is a plant well suited for mixed cropping and therefore well adapted to island areas where arable lands are scarce. The noni is a prolific plant that can produce 4-8 kg of fruit for harvesting every month.

The noni fruit has an oval shape and is about 10-18 cm long. The fruit is green during the early formation stages, becoming yellowish as it develops and may sometimes turn white when ripening. In the process of fruit development it may emit

pungent scents. Noni has medium concentrations of carbohydrates and dietary fibres. Its pulp and powder contain vitamins C and B3, iron and potassium, plus vitamin A, calcium and sodium in lesser amounts. However, noni juice contains only vitamin C.

Due to its strong and pungent odour as fresh fruit, noni is essentially consumed in processed forms, such as capsules, powder and juice. Noni fruit can be processed to juice through different processing methods. The “traditional” method is by drip extraction, which is characterised by separating the juice from the pulp followed by fermenting the juice for at least two months. The alternative non-traditional method requires the pressing of the ripe noni fruit. The juice obtained can be bottled as a pure or diluted beverage. Juice can also be pasteurised if so desired.

Noni juice can be drunk or used externally to heal wounds or inflammations. The juice is essentially

consumed as superfood juice, as it has great effects on health. Noni juice is sometimes considered as a complement to nutrition with various healing effects, including hypertension-lowering, sleep--regularising, energy-boosting, anti-inflammatory, pain-killing (analgesic) and anti-bacterial effects. Noni juice currently takes advantage of the growing demand for “superfood” as it has very high nutritional value and health benefits. Imports are on the rise, particularly in the European market. Noni is a valuable crop because several parts of the fruit and plant can be used. Besides the high added value through processing of the noni fruit, its leaves can also be traded in the local markets for their essential nutritional values.

Noni juice is sold in glass or plastic bottles for a price of between €15 and €25/litre. It is also sold as powder or capsules. Noni products are subject to price fluctuations.

Figure 66: Noni products (Sources: a. www.florahealth.com/ca-en/products/noni-juice-jus-de-noni/, b. www.optimallyorganic.com/noni-powder, c. <https://glotelho.com/ng4l-noni-capsules-60-capsules.html>)



a. Bottle of noni juice



b. Bag of noni powder



c. Container of noni capsules



6.3 Going organic to increase value

In the context of niche and high-value international markets, the organic certification is of tremendous importance. The advantage of the organic certification, however, does not necessarily lie in its premium but rather in the wider access it grants to local producers to enter the niche market. It must be noted that the organic export market may be the only means for some ACP-Pacific products to gain access to the international market.

A good case to illustrate this is a trade opportunity gained by Fijian company Herbex Pte Ltd, which invested in the processing of organic-certified noni products. The details of this success story are presented in Box 4.



Box 4

HERBEX PTE Ltd.

An example of a wide variety of organic certified noni products

HERBEX PTE Ltd. is a company based in Lautoka, Fiji, and has been producing noni juice since 1998. Its brand “goodnoni” is becoming increasingly successful and is exported to more than 20 countries around the world. In 2006, the directors of Herbex founded another company, Pflanax PTE Limited, which produces standard noni juice for export and provides logistics.

Besides noni juice, Herbex produces a range of other noni food and cosmetic products. Goodnoni also covers dried noni and noni leaves, noni oils, powder and capsules, as well as soap and cream. The entire production process of goodnoni products, from fruit harvesting to pasteurisation, is carried out by Herbex in a 100% organic way. This is

certified by various labels, including the European Union organic label.

Herbex also offers the processing of noni for other brands. The company has an impact on its local community. Indeed, it chose not to plant its noni trees for production and to work directly with local suppliers. It has also supported the training of its staff in different functions and provided them with employment, from very basic to supervising and management level.

Herbex is planning to expand its activities and wants to start producing frozen vegetables to be sold on the Australian, New Zealand, US and Canadian markets.





7

SWOT ANALYSIS FOR DEVELOPING THE HORTICULTURAL INDUSTRY IN ACP-PACIFIC COUNTRIES

LOCAL, REGIONAL AND INTERNATIONAL MARKETS

The current fruit and vegetables sector in the ACP-Pacific countries is being studied to see how sufficiently production is meeting the needs of the domestic, regional and international markets. This section uses the strengths, weaknesses, opportunities and threats (SWOT) tool to analyse the various segments of the target markets.

7.1 SWOT analysis for the domestic market

7.1.1 Strengths

- There is **sufficient production to meet the local demand** (excluding tourist demand) for most fruit and vegetables in the ACP-Pacific countries, particularly in the case of fruit (e.g. bananas and coconut) and vegetable crops such as taro, yams, cassava and sweet potato.
- Local **know-how** and **technologies** are available to support the production of fruit and vegetables.

- Diverse **ethnic fruit and vegetables abound**, and while some of the production is not domesticated, it goes a long way towards **supplementing the general production**.
- Some of the local production systems are **well adapted to the organic** system of production.
- Year-round production** and marketing of fresh fruit and vegetables.
- Increasing prices** in the local market for products that can be exported as a result of an increase in export selling prices.

7.1.2 Weaknesses

- Between 70% and 80% of the population in the ACP-Pacific countries is engaged in **subsistence farming**.
- The **consumption of fruit and vegetables** by the population in the ACP-Pacific countries is **very low**. For example, in Kiribati it is estimated that more than 71.6% of the population do not eat a portion of fruit and/or vegetables every day.

- Imported fresh fruit and vegetables** are mainly addressing the **demand of the tourism** sector because some of them are too expensive for the domestic demand.
- Most of the fruit and vegetables **imported do not grow in the ACP-Pacific countries**, so local producers are unable to meet this demand.
- The local market for fresh fruit and vegetables trade has a **slow growth rate**.
- Quality and niche fruit and vegetable products, such as those certified as organic, do **not attract a premium price** or any price differential in the **local market**.
- The remoteness of many ACP-Pacific countries requires increased **transport logistics** with their associated **costs**, which further reduces the local producers' margins.
- Some **production resources** are **poorly managed**. A typical example is aging coconut trees that no longer have optimum yields and are not being replaced.



- Many of the ACP-Pacific countries face similar **geographical challenges** of limited, fragmented and/or scattered agricultural land area.
- Only a **few** of the large countries, such as Papua New Guinea, have the place for their local producers to achieve any **economies of scale**.

7.1.3 Opportunities

- A significant proportion of fruit and vegetable **exports consists of low-value crops**, such as coconut and some tubers, with room for value addition. The booming **tourism sector** offers an opportunity for local fruit and vegetable producers to produce niche products, including organic products. There are opportunities for local fruit and vegetable producers to partner with the tourist sector to develop “**green tourism**”. The **interests of resorts in locally grown fruit and vegetables** is increasing to satisfy their clients’ expectations.
- The **price of locally grown** fresh fruit and vegetables is **attractive** for the tourist centres,

as it reduces transportation costs compared with imported products.

- **Awareness creation** among the population of the ACP-Pacific countries to **increase** their **consumption of fruit and vegetables** as part of the fight against malnutrition.
- The **growing local population and urbanisation** present a **potential outlet** for the horticultural sector, which should make the strategy of import substitution profitable for the local horticultural sector.
- The urban **demand for ready-to-eat foods** that calls for processing and other value-addition activities for fruit and vegetables.
- Some **governments** of the ACP-Pacific countries are **supporting** the development of **organic** production. For example, the government of Papua New Guinea aims to make the country the main organic supplier to South-East Asia.
- There are **opportunities to further exploit and develop** the local production of fruit and vegetables. For example, the coconut production

in many ACP-Pacific countries is not fully exploited.

7.1.4 Threats

- **Reduction** in the **workforce** of farmers, especially among young people, as a **result of urbanisation and migration**.
- **Inadequate** funding to the agriculture sector for activities in the production, processing and marketing of fruit and vegetables.
- Damaging effects of **climate change** present a permanent challenge for local production of fruit and vegetables in ACP-Pacific countries.
- Growing conditions, especially the **quality of the soil and loss of arable land** to rising sea levels.
- Decreasing the land area for traditional staple crops would **increase imports**, which will not be a sustainable solution because of the higher prices of imported products.
- The devastating effects of **the COVID-19 pandemic** affecting health and effecting economic slowdown.



Table 20: SWOT analysis of domestic production and marketing in domestic markets of fruit and vegetables by ACP-Pacific countries

INTERNAL							
Strengths (+)		Strategies to consolidate strengths		Weaknesses (-)		Strategies to improve on weaknesses	
1	Sufficient production of fruit and vegetables to meet local demand	Increase education on the importance of fruit and vegetables	1	Subsistence or semi-commercial farming	Introduce enhanced farming systems and technologies, and train farmers in them		
2	Large proportion of the population is engaged in agriculture	Introduce the inclusion of fruit and vegetables in local production at all scales – backyards, home gardens, etc.	2	Dependency on imports	Intensify domestic production to substitute for imported products		
3	Local know-how in the production of fruit and vegetables	Enhance local but efficient technologies by farmer training and make inputs available	3	Low consumption of fruit and vegetables	Increase education on the importance of fruit and vegetables Promote the consumption of fruit and vegetables		
4	Year-round production and supply of fruit and vegetables	Stagger periods of production to prevent market gluts	4	High deforestation to increase the production area	Intensify education on resources use and land rejuvenation programmes		
5	Diversity of ethnic fruit and vegetables in the region	Domesticate some of the indigenous fruit and vegetables and popularise their use	5	Inadequate and poor-quality water resources for both domestic and agricultural purposes	Improve supply of water to both homes and farms through desalination plants, water catchment systems, irrigation schemes, recycling and harvesting of rainwater		
			6	Inadequate financial support from the government and financial institutions	Intensify education in financial literacy and introduce players to innovative sources of funding, such as crowdfunding, angel funding		
			7	High poverty rate in the region	Empower more people, especially the vulnerable, in income generation and other wealth-creation activities		
			8	Low productivity of most of the fruit and vegetable crops	Train producers in good agriculture practices (GAP) and give them incentives to increase productivity		
			9.	Low incentive for organic products in the domestic market	Educate domestic consumers to place value on organic products		

EXTERNAL

Opportunities		Strategies to take advantage of opportunities	Threats [-]		Strategies to avoid or minimise threats
1	Redirection of exported products to the domestic market	Education on improved nutrition through fruit and vegetables to create local demand	1	Decrease in the proportion of the population engaged in agriculture	Change perception of agriculture from hard work with low pay to technology oriented and business driven
2	Booming tourism sector	Increase production to meet taste of tourists Engage hotels and cruise operators to buy local food	2	Devastating effects of climate change	Train farmers in sustainable production methods and support them to adopt the principles
3	Some of the products imported can be produced domestically	Produce and improve quality of products that can be produced locally (which are currently imported)	3	Impact of COVID-19 on health and economic activities	Educate people on COVID-19 pandemic and support them to follow the protocols
4	Price competitiveness of local production	Make productivity enhancement inputs and services available, accessible and affordable to farmers	4	Low interest in agriculture, especially among the youth	Strengthen links between education and agriculture through career forums, internships Promote agricultural shows, awards and success stories
5	Improving land use	Educate local farmers in land protection measures and sustainable farming practices	5	High migration rate	Encourage young people to take an interest in agriculture
6	Political support to develop the local agriculture	Government, NGOs and international support organisations to team up to promote sustainable agriculture			
7	Support for organic agriculture	Develop more technical assistance for organic agriculture			



7.2 SWOT analysis for the regional market

7.2.1 Strengths

- **Australia** and **New Zealand** provide **major trading partners** (exports and imports) for fruit and vegetables produced in the ACP-Pacific countries.
- High populations of ACP-Pacific countries nationalities forming **diaspora communities** in Australia and Zealand, demanding local products from home.
- Both Australia and New Zealand have concluded **trade agreements** with the ACP-Pacific countries. For example, bilateral agreements were signed between New Zealand and some of the ACP-Pacific countries with the intention of assisting the latter to access the New Zealand market by meeting SPS requirements.
- Exports from the ACP-Pacific countries to other countries of the Pacific region exist for certain types of processed fruit and vegetables; for example, kava is exported from Vanuatu to New Caledonia.
- The establishment of the Pacific Horticultural and Agricultural Market Access Plus Program

(**PHAMA Plus**) with the aim of ensuring higher production volumes from the ACP-Pacific countries meet the SPS requirements in Australia and New Zealand.

- **Financing specific actions by PHAMA Plus**, such as trade fairs in New Zealand to promote products from the ACP-Pacific countries to link with potential New Zealand buyers.

7.2.2 Weaknesses

- **Limited flow** of trade in fruit and vegetables **between the ACP-Pacific** countries.
- Natural and geographical conditions mean most countries in the region have **similar fresh fruit and vegetable production**. This situation places them at a natural comparative disadvantage.
- **Difficulties in meeting the SPS and logistics requirements** for fresh fruit and vegetables to enter the Australian market.

7.2.3 Opportunities

- The **majority of export opportunities** for fruit and vegetables with the ACP-Pacific countries currently lies **within the Pacific region**.

- Few of the countries have **processing facilities** to add value to their local productions. There is therefore an untapped potential to be developed.
- Horticultural products with less added value, such as red papaya and taro, are popular within the Pacific diaspora and are in high demand in Australia and New Zealand.

7.2.4 Threats

- Difficulties for some of the products from the ACP-Pacific countries in **accessing the export markets** in the region, especially Australian markets, due to **SPS requirement and inability to meet food safety management** standards.
- **Restriction on kava imports** to Australia; it was even banned in the past. It is possible it could be banned again at any time. Similar fate could be imposed on any other product.
- **Limited staff of PHAMA Plus** working on programme implementation in Australia may affect the access for ACP-Pacific country's horticultural products to the Australian market.



Table 21: SWOT analysis of domestic production and regional marketing of fruit and vegetables by ACP-Pacific countries

INTERNAL							
Strengths (+)		Strategies to consolidate strengths		Weaknesses (-)		Strategies to improve weaknesses	
1	Increased demand from ACP-Pacific citizens in the diaspora	Continue to identify areas where ACP-Pacific citizens are concentrated and target these for export of local produce	1	Difficulties in accessing the Australian market	Improve quality of products via capacity building to meet the demands of the Australian market		
2	Bilateral trade agreements with New Zealand	Train exporters in the opportunities that exist because of the various trade agreements	2	Low visibility of products from the region in regional markets	Organise and attend trade shows, both virtual and physical, and showcase ACP-Pacific products		
3	Instituting of PHAMA Plus to assist in increasing the volume of horticultural products in ACP-Pacific countries	Take advantage of the activities of the programme and encourage more of such programmes	3	Limited flow of trade among the Pacific island countries as the countries have similar products	Target specific products for the regional market and develop them for acceptance in the regional markets		
4	Financing of specific trading activities by PHAMA Plus	Take advantage and encourage other institutions to invest PHAMA Plus could collaborate with agencies working in the financing sector	4	Cultural division of the ACP-Pacific countries	Maintain peace and good diplomatic relationships		
EXTERNAL							
Opportunities (+)		Strategies to take advantage of opportunities		Threats (-)		Strategies to avoid or minimise threats	
1	Exports of niche products with high added value	Intensify organic agriculture and develop specific market segments Identify funding to support the development of these value chains	1	Too short testing period for kava imports specifically in Australia	Negotiate for increase in period and volume		
2	Exports of products to meet diaspora demand	Get certification for niche markets	2	Limited support from the Australian government	Improve bilateral relations between ACP-Pacific countries and Australia		
3	PHAMA Plus to facilitate and enhance more trade relationships with Australia	Take advantage of the activities of the programme and encourage more such programmes	3	Long distance to destination markets	Increase the value of products to send to distant markets to improve the market margins		
4	Some countries have good facilities for processing	Develop such facilities to climb up the value chain	4	Very high trade imbalance with the regional market	Improve domestic production for some of the imported products to substitute for importation		
			5	Challenges of PHAMA Plus operations in Australia	Resource the operation of PHAMA Plus well, especially with personnel		

7.3 SWOT analysis for the international market

7.3.1 Strengths

- ACP-Pacific countries are **endowed with naturally high-value spices** (e.g. ginger, vanilla and pepper) and processed products (e.g. kava beverage, copra, virgin coconut oil and noni juice) that can be sold on the international market at high prices to compensate for freight costs.
- The ACP-Pacific countries belong to international development-oriented organisations (e.g. COLEACP) that they can team up with to develop their horticulture industry.

7.3.2 Weaknesses

- Fresh fruit and vegetables from ACP-Pacific countries are almost excluded from the international market because of the obstacles that **SPS requirements** present.
- The products of the ACP-Pacific countries have lower margins than similar products from other competitive regions because they incur very **high transport and other logistics costs**.
- **Export volumes** from ACP-Pacific countries are **small** and do offer margin for manoeuvre for bargaining for competitive prices or benefiting from **economies of scale**.



- **Limited financial and institutional capacity** (low investment support from the financial sector).
- **Inadequate information and data** on the external market to guide preparations and positioning for advantage.
- **Inadequate infrastructure** to support the horticultural industry, such as packhouses.

7.3.3 Opportunities

- The ACP-Pacific countries are exposed to the export of low-value products that are not economically beneficial, but interest remains high to add value and export as **high-value horticultural products**.
- Even though exports to Australia and New Zealand are logistically easier compared with more distant international markets, the latter still present interesting trade opportunities to ACP-Pacific countries.
- **Some of the markets for processed products** coming from ACP-Pacific countries, such as vanilla, turmeric and virgin coconut oil, are **more developed in Europe, Asia and the USA** than in the nearby Oceanic region.
- **Value can be added** to most of the products from the ACP-Pacific countries traded on the international markets to increase their market



values and to reduce their volumes (which will reduce their transport cost).

- **Prices for specific products** on the international markets are **higher** and provide opportunities that can compensate for the additional efforts and offset the additional export costs.

7.3.4 Threats

- One of the most important threats to the ACP-Pacific countries is the **wide variation in prices for the niche products**.
- The consequences of **climate change** in some of the ACP-Pacific countries are among the factors contributing to low production.
- The **high-value-potential products are not exclusively grown in the ACP-Pacific** countries: they are still subject to global competition.
- Developing high-value crops should **not deteriorate the countries' environments**. For example, recent questioning of the reasons for deforestation to satisfy international demand for kava.
- Emerging **concerns about environmental costs** of food on "**western**" markets, especially in Europe.



Table 22: SWOT analysis of domestic production and international marketing of fruit and vegetables by ACP-Pacific countries

INTERNAL			
Strengths (+)		Strategies to consolidate strengths	
1	Membership of some international development organisations, such as COLEACP, that they can partner with to develop the horticultural industry	Demand for expertise support from COLEACP and similar support-giving organisations for local companies in agribusiness to be developed	1
2	Ability to add value to some products (e.g. coconut, noni and kava) in the region to enhance their market value	Develop the needed human resources (skills), technologies (ICT) and infrastructure (housing, electricity, roads, water) to support value addition	2
			3
			4
			5
EXTERNAL			
Opportunities (+)		Strategies to take advantage of opportunities	
1	Global demand for niche products with high added value	Position the production of niche products, such as organic and others	1
2	Exports of niche products with high added value, e.g. organic products	Add value to products to enhance their market value	2
3	Production of some global products, such as kava and vanilla, with few competitors	Intensify the production of products for which the ACP-Pacific countries have both production and economic advantages	3
4	Available trade opportunities in the international markets	Prospect for available markets for products and establish links to get into such markets	4
5	Higher price incentives provided for products on the international market	Develop capacities for preparing products with qualities to meet conditions for higher prices	5

7.4 Summary and conclusion for the section

The analysis revealed that fruit and vegetables are produced locally in considerable amounts in most of the ACP-Pacific countries. They are mostly sold in domestic fruit marketplaces, on the side of roads, to local supermarkets, or directly at the farm gate (usually collected by cooperatives, NGOs, or private sector for export). Current fruit and vegetable production in the ACP-Pacific countries is not sufficient to meet the local market in almost all ACP-Pacific countries.

The countries' horticultural sector is affected by several weaknesses. Among them are the geomorphology, which is an obstacle to the development of fresh exports, as the isolation of some ACP-Pacific countries results in longer shipping time.

Some major threats have also been identified. These are: trade flow in fruit and vegetables between the ACP-Pacific countries is limited; Australia and New Zealand are the major destinations for fruit and vegetables produced in the ACP-Pacific countries; and the SPS and logistics constraints make any fresh fruit and vegetable exports to remote markets difficult. However, support from the public sector is a major opportunity for ACP-Pacific fruit and vegetable producers and exporters to access both regional and international export markets. Some ACP-Pacific countries' products face difficulties accessing the export market.

Investing in the local market of fruit and vegetables presents however many opportunities for ACP-Pacific producers, especially concerning financial margins. Creating niche products

(especially by organic production), processing and certification also provide better opportunities for products from ACP-Pacific countries on the international markets.

High-value products that the ACP-Pacific countries are endowed with (e.g. vanilla, turmeric, ginger, kava and virgin coconut oil) are the products that have potential for the international markets, where the demand is increasing in a very favourable context for fruit, vegetable and spices, especially in the USA, Europe and Asia. This is in addition to their access to the Oceanic region.





8

CONCLUSIONS

8.1 Summary of key fruit and vegetables in terms of status

Table 23: Summary of key fruit and vegetables in terms of status*

Crop	Market		
	Domestic	Regional	International
Fruits	Bananas	C O	C
	Kava		C O
	Noni	C	C O
	Pineapple	C O	
	Watermelon	C O	
Vegetables	Roots and tubers	C	C O
(Processed) Coconut	Coconut	C O	C
	Copra		C
	Virgin coconut oil		C O
Spices	Ginger		C O
	(Black) pepper		O
	Vanilla		C O
	Turmeric		O

Status: C = Well established and mature market segment

O = Market segment with potential and development opportunities

CO = Well established market segment with further growth opportunities



8.2 Conclusion of the study

In terms of exports, it is clear that the most interesting products are niche products with high added value. These do not face competition from countries that can afford much more competitive prices, and their price compensates for transport costs which are very expensive for such isolated countries. Typical – almost endemic – products of the region, such as kava, present export opportunities, both to the Pacific diaspora community and to other markets looking for exotic products with additional therapeutic virtues. Spices also represent an export opportunity because they have a high added value, and because international market demand for them is increasing. The ACP-Pacific countries could benefit even more from these crops by developing more local processing. Expensive spices, such as vanilla and ginger, are sent in bulk to other countries (e.g. New Zealand) from where they are re-exported to the rest of the world. Relocating the value chain to export more final products is important and would have many positive spin-offs. This is also relevant for coconut, the value chain of which would benefit from being developed beyond the copra stage. As an inspiration, many success stories exist, and are highlighted in this study.

The local market is also an important development lever for certain commodities. Opportunities do exist, but it is important to manage a situation where the agricultural labour force is decreasing while the population is increasing. The desire of various states and organisations to promote the consumption of fruit and vegetables, to combat the serious problems of obesity and other nutrition-related illnesses, should be an opportunity for the

horticultural sector of the ACP-Pacific countries. Meanwhile, the hotel sector and tourism in general should constitute a new opportunity for the region's horticultural production. With this in mind, work must be done by the local authorities and the actors in the sector to convince hotels to offer local products, and to help producers reach the standards required by the tourism sector. Watermelon, pineapple, bananas, coconut and other exotic fruit produced locally could be offered to the sector quite easily.

Many challenges remain, particularly in terms of logistics and productivity, but the actions outlined here are important areas for investment to enable progress in expanding the horticultural sector in the ACP-Pacific countries.

It is recommended that the horticultural sector in the ACP-Pacific countries focus its development efforts in the following areas.

- When it comes to export, high-value crops and products should be considered to compensate the high freight costs. Near-endemic crops, such as kava and noni, and high-value spices, such as vanilla and ginger, are good examples. These should be targeted to niche markets in the major trading blocs (Oceania, North America, East Asia,

EU), to avoid competing with bigger players, namely in the spice sector.

- Continuing to develop organic agriculture and obtain international organic certification is key for anyone wishing to export. This is not so much to gain a premium, but mainly to “open the door” to export niche markets. Getting certification might also be an advantage on the domestic market in the perspective of “green tourism”. Going organic is a significant marketing argument to convince hotels and resorts, who can use it to attract tourists.
- The “local aspect” is the second dimension of green tourism. One opportunity lies in targeting the tourist sector, particularly the hotel trade, with high-quality local produce to cater to the requirements of the modern “gastronomic” tourist. “Easy wins” in this sector would be watermelon, pineapple, bananas and coconut, which hotels typically import.
- It is also important to develop processing facilities, to create more value locally and new jobs, and to capture some of the value currently added in primary destination countries. This should be through the development of local agribusiness and should target high-value and niche products, such as vanilla, ginger, turmeric,

copra derivatives and virgin coconut oil. The help of external investors might be a way to initiate this transition from bulk to processed, but it must be ensured that the economic benefits accrue, at least partially, to the region.

- It is important to encourage governments in their drives to combat obesity and other non-communicable diseases that have arisen with the move to unhealthy, “western”, high-energy diets, especially in urban areas. If governments can successfully persuade their populations to change to healthy diets with good proportions of fruit and vegetables, the local market will be open to the local horticultural sector.
- Finally, improving the capacity of those working in the value chain from farm to plate, through skills development, knowledge dissemination and technical know-how is important. This should range from improved farming practices (“good agricultural practices”) to value-addition processing and accessing markets (including SPS and market intelligence). Actors in the sector might get in contact with organisations, which are ready to bring operational support to develop local value addition.



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