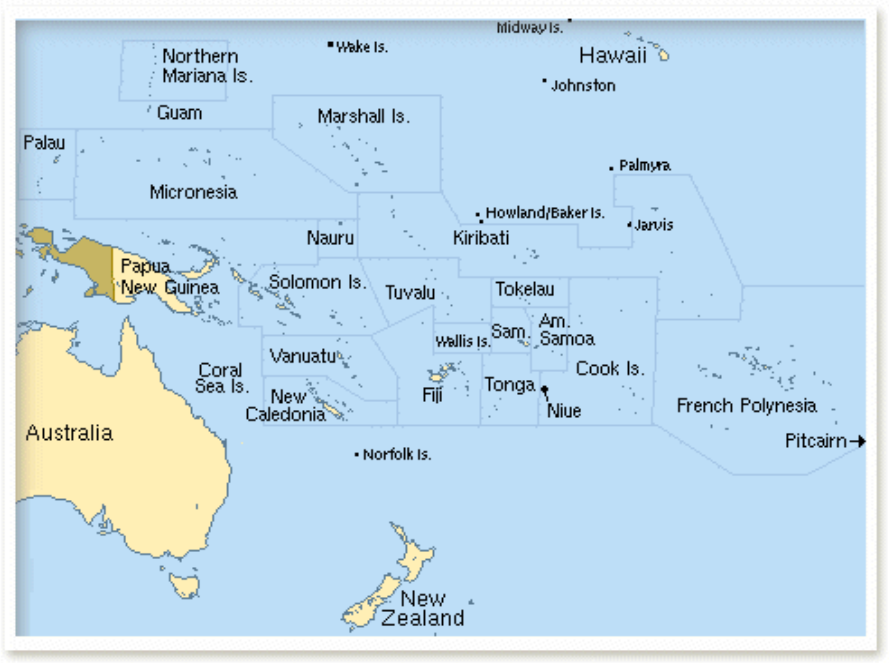
NATURAL RESOURCES MANAGEMENT AND ENVIRONMENT DEPARTMENT
Food and Agriculture Organization of the United Nations

ORGANIC AGRICULTURE AND FAIR TRADE

IN PACIFIC ISLAND COUNTRIES



This desk study has been prepared by Winnie Fay Bell and comments were kindly provided by the Pacific Regional Organic Task Force in May 2009

Table of Contents

Tables and Graph

I. GENERAL OVERVIEW

1. Purpose

The increased demand for high quality products in export markets, coupled with Pacific Island Countries (PICs) national desire to protect the environment, biodiversity and family farming structures, lead to assume that organic agriculture could offer good prospects for PICs development. Besides market opportunities, organic agriculture could increase PICs food self-reliance and thus, contribute to reducing the alarming trend of dependency on food imports, as well as improving nutrition. This Report explores the potential of organic agriculture and fair trade in PICs, with a specific focus on five main commodities: cacao, coffee, pepper, vanilla and virgin coconut oil.

2. Agricultural background

While highly diverse, PICs share common constraints that impede their efforts to achieve balanced economic growth and sustainable food security. Major limitations include small size, remoteness, geographic dispersion and vulnerability to natural hazards as well vulnerability to external economic conditions. Most people live in rural areas and rely heavily on agriculture, fisheries and forestry. The export sector generally comprises a narrow range of primarily agricultural commodities.

The countries of Melanesia include Papua New Guinea, Fiji, Solomon Islands, and Vanuatu. These countries are the largest of the Pacific Islands, with over 90% of population and 85% of land mass of the Pacific Island Countries. They have the best natural resources of the island countries with fertile soils and each with some exploitable mineral wealth. Papua New Guinea, Solomon Islands and Vanuatu have predominantly agricultural economies with a high percentage of the population engaged in subsistence agriculture. Fiji also has a strong base of subsistence agriculture but also supports agriculture for commercial production.

The Polynesian countries of Samoa and Tonga are smaller but have relatively strong economies. Samoa and Tonga have fertile, volcanic soils, agriculturally-oriented economies and cash crops for export. Their economies also benefit significantly from remittances from expatriate family members living in the USA, Canada, Australia and New Zealand.

Micronesia includes the Federated States of Micronesia, Kiribati, Marshall Islands, Nauru and Palau, Cook Islands, Niue, Tokelau, and Tuvalu. All of these islands are smaller and are more spread apart. They tend to have sandy soils with limited fertility able to support a restricted range of vegetation. Some grow specialized export crops and others have developing tourism industries, but all economies depend on expatriate remittances and many rely on external aid. Many of these countries are vulnerable to water shortages and water contamination, sea level rise, coastal erosion and increasingly regular natural disasters.

Based on current trends the total population of the Pacific Islands is predicted to increase by 50% by 2030 (SPC, 2008). Almost all of the countries are experiencing massive rural-urban migration flows. Governments are currently seeking to reverse this trend by investing in rural infrastructure and promoting employment opportunities in agriculture.

The Pacific Region is facing a number of region-wide challenges, including the effects of climate change, degradation of ecosystems, an urgent need to generate livelihoods, and

populations that are increasingly consuming imported, highly refined foods, accompanied by decreased local food production and consumption. The result is a looming public health crisis, as well as risks for environmental collapse.

One solution to addressing the wide-spread problem of nutrition-related diseases (e.g. diabetes, cardio-vascular problems) is a revival of traditional food and promotion of diversified diets. Diversification of farming systems also provides more resilience to climate variability and to the increasing incidence of natural disasters.

3. The state of organic agriculture in the Pacific Region

Organic agricultural production and trade in the Pacific

Worldwide, organic agriculture is growing rapidly, with international retail sales of over US$ 46 billion in 2007, doubling the 2002 market value. The steadily growing consumer demand for organic commodities provides a viable opportunity for PICs farmers and processors to benefit from this expanding international market. However, the development of the organic sector requires specific policy and institutional standards in order to meet international market requirements. This being said, PICs traditional farming practices are very much in line with organic agriculture practices. Today, many communities still have agriculture systems based on 'age-old' practices which ensure environmental integrity and do not use chemical inputs. But for these products to be exportable to overseas markets as 'organic' they must be certified. Organic agriculture provides important opportunities for PICs to export to niche markets a number of high-value, low volume crops, thereby enhancing economic sustainability.

According to scattered and informal reports available, organic agriculture occupies 22 692 hectares of agricultural lands in the Pacific, averaging 2.83% of total agricultural land, and a total of 5 582 farms (see Table 1) in Cook Islands, Fiji, Niue, Papua New Guinea, Samoa, Solomon Islands and Vanuatu. Kiribati and Tonga have developing organic movements but there is currently no data available. Moreover it should be noted that it is extremely difficult to obtain accurate data as no country has been collecting this information comprehensively and certifying agencies are not requested by authorities to provide such information. Efforts are currently underway, through the Regional Organic Task Force (ROTF) to start organizing data collection in each country.

Table 1: Organic agriculture production in PICs (2006 data)[1]

Country	Organic agriculture area (ha)	Share of total agricultural land (%)	Number of farms
Cook Islands	69	no data	198
Fiji (2005)	100	0.02	no data
Niue	159	1.99	61
Papua New Guinea	2 497	0.24	4 558
Samoa	7 243	5.53	213
Solomon Islands	3 628	3.10	352
Vanuatu	10 361 cattle	6.12	4 (cattle)

[1] Mapusua, K. 2009. Organic agriculture in the Pacific Region. Willer, Helga & Kilcher (Eds.). In: *The World of Organic Agriculture: Statistics and Emerging Trends.* FIBL-IFOAM Report.

	1 265 cocoa 200 (spices)		1 200 (cocoa) 200 (Venui vanilla)
TOTAL	22 692	2.83	5 582

It should be noted that the certification status of producers changes periodically, largely because of high certification costs therefore, unsustainable and so they do not maintain certification status. Others find that with high variation in production it is unrewarding to continue certification, until production resumes to higher levels. Therefore, certified organic products coming from the PICs are liable to change one year to the next. In conjunction with the organic movement, there is growing interest in the PICs of fair trade programmes. Efforts are being made by the ROTF to link organic producers into fair trade systems so as to further add value. In the general absence of domestic markets, products are exported mainly to Australia and New Zealand due to their proximity and to the presence of large communities of Pacific Island emigrants. To a lesser extent, products exported to Europe and USA and Japan represent a steadily growing market. The main commodities include: beef, cocoa, coffee, fruit and fruit juices, herbs and spices, honey, noni products, vanilla, vegetables and virgin coconut oil (see Table 2).

Table 2: Certified organic products and exports of PICs (2008)[2]

Product	Production countries	Export countries
Beef	Vanuatu	Australia
Cocoa	PNG, Samoa, Vanuatu	France (Vanuatu only)
Coffee	PNG, Samoa	
Fruit and fruit juices	Cook Islands, Fiji, Samoa, PNG	Australia
Herbs and spices	Fiji, PNG, Samoa, Vanuatu	Australia, New Zealand, New Caledonia
Honey	PNG	
Noni products	Cook Islands, Fiji, Niue, Samoa	Europe (Fiji only)
Vanilla	Fiji, Niue, Samoa,Vanuatu	Australia, New Zealand, New Caledonia
Vegetables	Cook Islands, Samoa, PNG	
Virgin Coconut Oil	Fiji, Niue, Samoa, Solomon Islands, Tonga, Vanuatu	Australia, New Zealand, USA, UK

Internationally recognized organic certification bodies have been crucial in allowing Pacific organic producers access to international markets. The majority of certifying agencies working in the Pacific are based in Australia or New Zealand, with the exception of the Organic Crop Improvement Association (OCIA) from the USA and ECOCERT from France. In 2007, organically certified virgin coconut oil from Samoa was exported to the Body Shop International in the UK. Currently, a group of European organic certifiers, Cosmos, has started work towards the certification of organic cosmetic products.

[2] Vinning, G. 2008. Marketing organics in the Pacific Islands. Suva, Fiji.

Table 3: Organic certification bodies currently operating in PICs[3]

Agency	Country
National Association for Sustainable Agriculture (NASAA), Australia	Fiji, PNG, Samoa, Solomon Islands
Australian Certified Organic (ACO), Australia	Cook Islands , Fiji, PNG
Assure Quality, New Zealand	Cook Islands, Vanuatu
BioGro, New Zealand	Cook Islands, Niue, Vanuatu
Assure Quality, New Zealand	Cook Islands
ECOCERT, France	Fiji, Vanuatu
Organic Crop Improvement Association (OCIA), USA	Fiji

Policy environment

The Pacific Organic Production Association (POPA) requested the South Pacific Commission (SPC) to assist the various national associations in developing capacity in the Region in organic farming. Hence, in 2006, the 2nd Heads of Agriculture and Forestry Services Meeting requested SPC to seek support and commence that work. The Pacific **Regional Organic Task Force** (ROTF) was immediately established, under the aegis of the Pacific **High Level Group**. The Pacific High Level Organics Group is a group of policy makers, chaired by the Honourable Tuilaepa Sailele Malielegaoi, the Prime Minister of Samoa, who has championed organic agriculture by providing strategic support and advocacy at the highest levels of Government, with the Food and Agriculture Organization of the United Nations serving as an advisor to the Pacific leaders.

With the financial support of the International Fund for Agricultural Development (IFAD) and the technical assistance of the International Federation of Organic Agriculture Movements (IFOAM), the ROTF developed the **Pacific Organic Standards** (POS), which were endorsed in 2008 by the Pacific High Level Group, during the annual meeting of the Pacific Forum Islands leaders**.** POS were subsequently launched by the Prime Minister of Samoa at the 2nd Regional Conference of the Ministries of Agriculture and Fisheries, in Apia, Samoa.

The Pacific Organic Standard strives to create a vehicle for organic production by which maximum returns can be achieved through organic agriculture. The provisions of the Standard take into account local agricultural traditions and the two global organic standards, IFOAM's Basic Standards and Codex Alimentarius Commission guidelines for Organically Produced Foods. Pacific stakeholders have ownership over their regional standards. In addition to this, the Pacific Organic Standard is consistent with existing international standards which will facilitate future export market integration. Ultimately, the Pacific Organic Standard is expected to serve as a foundation for raising the profile of organic agriculture among farmers and consumers, while strengthening organic capacity production in the Region and simultaneously promoting further development of local, regional and international markets for Pacific organic agricultural products.

[3] Mapusua, K., and Maccari, M. 2007. An Overview of Organic Agriculture in the Pacific, IFOAM.

The Pacific Organic Standard is the result of a true private/public partnership undertaken by the ROTF which successfully engaged a wide range of stakeholders including Government and civil society and private sector groups interested in promoting organic agriculture in the Region. The Regional Organic Task Force has also drafted a **Pacific Regional Organic Strategic Plan**, including a vision and priority activities for five years, through extensive cross-sector consultations. It has also completed a capacity needs assessment of the national lead organic agencies so as to facilitate future capacity building and development, as well as to ensure the full implementation of the objectives and standards set forth in the Pacific Organic Standard.

The Pacific Regional Organic Strategic Plan seeks to guide the integration of relevant activities in national and sectoral policies and strategies, as well establishing and strengthening national organic associations. It also seeks to: establish a regional organic organisation; develop robust group certification schemes and internal national control systems; establish a Pacific organic brand for marketing locally and internationally; raise awareness among stakeholders; and strengthen research and development, especially with regards post-harvest handling quality, availability of inputs and supply consistency. Clear-time bound indicators have been identified to monitor progress.

Institutions involved in organic agriculture

The Regional Organic Task Force is composed of 10 Pacific Island Countries representatives and supporters, including agricultural ministries and civil society and private sector operators:

- Department of Agriculture and Food, Tonga
- Ministry of Agriculture, Vanuatu
- Ministry of Agriculture and Fisheries, Samoa
- Ministry of Environment, Lands and Agricultural Development, Kiribati
- Bio Fenua, French Polynesia
- Equilibres (sustainable development consultancy), New Caledonia
- Fiji Organic Association, Fiji
- Kastom Gaden Association, Solomon Islands
- Niue Organic Farmers Association Incorporated
- PNG Coffee Growers Federation, Papua New Guinea
- Titikaveka Growers Association, Cook Islands
- Tonga National Youth Congress, Tonga
- Women in Business Development Incorporated, Samoa
- Land Resources Division of the South Pacific Commission
- School of Agriculture, The University of the South Pacific
- FAO Sub-Regional Office for the Pacific Islands

Ad hoc advisors played an integral role in the creation and development of the Pacific Organic Standard. They are the National Association for Sustainable Agriculture Australia (NASAA), The Pacific High Level Organics Group and the Secretariat of the Pacific Community (SPC). The latter is taking a leading role in the Region promoting and supporting organic agriculture, in particular it's Land Resource Division (LRD). Other regional organizations which are supporting organic agriculture are the University of the South Pacific, particularly through it Institute for Research, Extension and Training in Agriculture (IRETA).

The Melanesian Farmer First Network (MFFN) is a network of Melanesian farmers which first came together in 2002 with the aim to assist participating agencies to build their capacity to plan and manage projects in sustainable agriculture. Partner organizations and NGOs involved in the network are Kastom Gaden Association Solomon Islands, Farm Support Association Vanuatu, Paruparu Education Development Centre Bougainville and Community Based Health Care PNG. The network believes in learning from experience and sharing this experience with each other, linking agriculture with food security and health. MFFN signed a Memorandum of Understanding with the Secretariat of the Pacific Community (SPC) so as to ensure collaboration between the two groups.

The International Fund for Agricultural Development (IFAD), FAO's Sub-Regional Office for the Pacific Islands, the European Union, IFOAM, AusAid and NZAid have all been involved in advocating and supporting the implementation of organic agriculture in the Region.

4. National instruments and stakeholders affecting the growth of organic agriculture

Country	Conducive policy instruments	Civil society actors and actions
Cook Islands	o Organic Technical Committee (OTC) within the Ministry of Agriculture o OTC endorsed Cook Islands National Standards for Organic and Bio-Dynamic Produce document (2001), in cooperation with the Cook Islands Organic Association (CIOA) o Ministry of Agriculture providing trainings on organic crop production o Minister for Environment aims to convert the entire island of Aitutaki to organic	o Cook Islands Organic Association (CIOA), has a National Inspector, issuing "Certificate of Merit" for organic nonu jointly with Ministry of Agriculture and CIOA o Titikaveka Growers Association (TGA), is piloting a scheme for conventional growers to convert to organic, also looking to start an organic aquaculture farm as model for all PICs
Fiji	o The Government is interested in certified organic agriculture as a means to diversify production and exports, but has not yet implemented action through the National Plan. o The Ministry of Agriculture and Primary Industry (MAPI) has worked with vanilla farmers to introduce organic methods o Ministry of Youth, Employment Opportunity and Sports and the Japanese Organization for Industrial, Spiritual and Cultural Advancement (OISCA) developed an educational program on organic agriculture	o The Secretariat of the Pacific Community (SPC) and its Land Resource Division is carrying out projects on organic farming o Fiji Organic Association (FOA), currently collaborating with SPC o The Foundation for the Peoples of the South Pacific working in Sigatoka on organic agriculture o The National Food and Nutrition Centre is promoting organic agriculture in home-gardens
Kiribati	o Ministry of Environment, Lands and Agriculture Development (MELAD) teaches organic composting to farmers o Kiribati Agricultural Division (KAD)	o Kiribati Organic Farming Association (KOFA) was the 2005 outcome of an organic workshop organized by the Institute for Research Extension

	focuses on combating food security, generating farmers income, reducing food imports, promoting local foods and increasing living standards o The Government helped establish the Kiribati Organic Farming Association o Law prohibiting use of N-fertilizers	and Training in Agriculture (IRETA) and Kiribati Agriculture Division (KAD) o KOFA exploring certification process
Niue	o Niue National Strategic Plan and the Niue Environmental Act (Halavaka ke he Monuina Plan) of 2004 focuses on organic agriculture as a way to promote agricultural growth, in close collaboration with NIOFA o Government, in partnership with NIOFA, wants to declare Niue an Eco-Nation by 2015-2020 and will do this by adopting organic production, management, certification, business, and marketing programmes and strengthening the tourism industry	o Niue Island Organic Farmers Association (NIOFA) o NIOFA created Niue Organic Certification Authority, a certification body accredited by BioGro o Organic Industry Development Project o Young Farmers Group o Mutahefonua: Niu-Gro International o Matukuhifi Organic Producers Association
Papua New Guinea	o Department of Agriculture and Livestock (DAL) promotes organic agriculture: organic agriculture appears in several policies o DAL and the National Institute of Standards and Industrial Technology (NISIT) received advice from GTZ/Protrade consultants (1994-96) in order to develop national standards and a control system for organic agriculture (little progress since then) o From 1997-1999, DAL conducted a study on the state of organic production and export potential o DAL submitted a proposal to create an association for organic agriculture, which would function as the national organic certification body (plan was approved but not budget)	o The Subsistence Agriculture Improvement Programme (SAIP) is the main organic agriculture training programme for young people o National Agriculture Research Institute (NARI) conducts research on all natural, locally made pesticides o Fresh Produce Development Company Ltd. (FPDC) has put organic farming principles into training programmes o Organization for Industrial, Spiritual, and Cultural Advancement (OISCA) a Japanese NGO teaching youth organic farming techniques (1987) o Agmark Pacific Ltd. sold organic cocoa for 18 months in 1997/98 for Kaoka (unsustainable certification costs)
Samoa	o National Organic Advisory Committee, chaired by the Prime Minister o Ministry of Agriculture and Fisheries (MAF) with WIBDI, created a Strategic Plan for the Organic Farming Industry in Samoa in 2004	o Women in Business Development Inc. (WIBDI) o Minister for Ministry of Agriculture and Fisheries (MAF) and staff invited the Executive Director of WIBDI on a tour of organic farms and research

	o One of the six goals in the Strategy for Development of Samoa 2005/07 is partnering with the organic industry to accelerate growth in agriculture o MAF, Samoa Organic Farmers Association (now absorbed into WIBDI) and Malaefono organic farm signed a Memorandum of Understanding for providing research, demonstration and promotion of organics o Ministry of Natural Resources and Environment also supports the promotion of organic agriculture with NGOs, academic institutions and government departments	organizations in New Zealand. The outcome: a list of recommendations, including a closer working relationship between MAF and WIBDI o FAO Technical Cooperation Project organic farming in Samoa (2009-10) o The Global Environmental Fund is supporting 8 organic vegetable gardens o Pacific Organic Producers Associations (POPA) o The Nu'u Research Station researching organic fertilizer
Solomon Islands	o Senior staff in the Department of Agriculture and Fisheries has expressed interest in organic agriculture o Commodities Export Marketing Authority (CEMA) is considering potential commodities for certification	o Appropriate Technology for Community and Environment works on food security issues and established the Kastom Garden Programme o Kastom Garden Program is promoting organic agriculture o Fiu Rice Organic Farming o A guide for local farmers: "The Natural Way of Growing Food for the Solomon Islands".
Tonga	o National Organic Certification (proposed) o Organic Coordination and Development Committee (not yet fully operational) o The Government supporting a $2.5 million project from Stabex Fund for organic certification of vanilla	o Tonga Organic Association (TOA) o Educational initiative "Walk the Organic Talk" for tourists, schools and farmers o The Tonga Development Trust
Vanuatu	o Government did subsidize livestock certification in the past	o Farm Support Association (FSA) o Venui Vanilla certifies organic farmers o Venui Vanilla has produced a series of pamphlets in Bislama on the production of organic vanilla o The Vanuatu Agricultural Research and Training Centre (assisted by CIRAD) is doing research on organic cocoa, biological control of coconut insects and the local nangai nut

II NATIONAL COUNTRY PROFILES FOR ORGANIC AGRICULTURE

1. Cook Islands

The Cook Islands are a group of 15 islands and atolls with a population of 21 000. About 75% of all households are engaged in subsistence farming, of those 15% are engaged in subsistence with some cash cropping and less than 10% in commercial agriculture (Vinning, 2008). A few years ago integrated pest management (IPM) techniques were introduced to the islands, this combined with rising costs of synthetic fertilizers, herbicides and pesticides further reduced an already limited use of commercial inputs. Some islands have imposed bans on various types of chemicals including synthetic fertilizers. However, one of the main agricultural export crops, papaya, still receives high amounts of fertilizers and chemicals.

Conventional Exports (2006)[4]

Item	Quantity (tonnes)	Export Value (US$1 000)
Fruit juice	202 R	685 R
Papaya	93 R	129 R
Fresh fruit	11 R	29 R
Bananas	22 F	13 R
Citrus juice (single strength)	1 F	9 F
Chillies and peppers (green)	1 R	3 R
R=Trading partner estimates	F=FAO estimate	

Government policy for organic agriculture

The Government is developing legislation on consumer protection. The main organic group is the Organic Technical Committee (OTC) which consists of staff from the Ministry of Agriculture and executive members from the Cook Islands Organic Association (CIOA). The Ministry of Agriculture works closely with CIOA to promote organic agriculture in the Cook Islands. The OTC endorsed the Cook Islands National Standards for Organic and Bio-Dynamic Produce document (2001) in cooperation with CIOA. The Ministry of Agriculture is providing several training programmes on organic crop production and is now considering the Strategic Organic Plan. In addition, the Minister for the Environment aims to convert the entire island of Aitutaki to organic agriculture by forbidding the importation of chemical fertilizers and toxic sprays.

Inspection and certification of organic export products

Currently Agriquality, BioGro and Assure Quality all certify noni for noni juice for the export market. In July 2001 the Cook Islands Organic Association (CIOA) with the endorsement of the Ministry of Agriculture and the help of BioGro New Zealand produced a document titled "Cook Islands National Standards for Organic and Bio-Dynamic Produce". The national certificate for organic produce is approved by both the Ministry of Agriculture and CIOA. Currently, this certificate is only being accepted by overseas buyers of noni. CIOA has a National Inspector who issues Certificates of Merit to farmers who fulfil all the requirements of organic production. Organically certified nonu, taro and papaya are currently being grown under this certification.

[4] FAOSTAT http://www.fao.org/corp/statistics/en/

Domestic market of organic products

Organically grown products are mostly sold on the local market which has expanded significantly, largely due to tourism. The Cook Islands were visited by almost 100 000 people in 2007, almost five times more people than the current population of the country (Vinning, 2008).

Certified organic products and trade in the Cook Islands

Item	Production	Export
Nonu	X	X
Taro	X	X
Papaya	X	X

Research, training, extension and awareness for organic agriculture

Cook Islands Organic Association (CIOA) has been working closely with the Government and the Ministry of Agriculture to promote organic agriculture practices. They were also a key force in establishing the "Cook Islands National Standards for Organic and Bio-Dynamic Produce". CIOA is responsible for the National Inspector who issues the Certificate of Merit. Titikaveka Growers Association (TGA), one of the main driving forces for organic agriculture in the Region, is piloting a scheme for conventional growers to convert to organic agriculture practices. They are pursuing the creation of a compost service as there is a huge amount of green waste that is burned weekly. TGA is also developing a pilot project for an organic aquaculture farm with plans to yield 3 000 fish and 40 000 oysters a months for a gross of over US$ 330 000 which could become a model to be replicated in the Region (Tofinga, 2006).

2. Fiji

The Republic of Fiji Islands consists of approximately 330 islands with about 100 of them inhabited. The population is about 800 000 and 60% of the total population lives in rural areas. Only 16% of all the land is suitable for agriculture and is found mainly along the coastal plains, river deltas and valleys: 24% of this is for sugar production, 23% for coconut and 53% for other crops such as ginger, rice, fruits, root crops and vegetables (Vinning, 2008.).

Conventional Exports (2006)[5]

Item	Quantity (tonnes)	Export Value (US$1 000)
Sugar (raw centrifugal)	249 378	124 267
Water, ice etc.	158 038	50 193
Pastry	8 226	13 864
Taro (cocoyam)	11 636	12 335
Molasses	164 423	11 071
Wheat flour	19 005	6 405
Macaroni	3 283	5 707
Beef preparations	1 266	4 026
Ginger	1 187	3 283
Breakfast cereals	2 418	3 142

[5] FAOSTAT http://www.fao.org/corp/statistics/en/

Government policy for organic agriculture

The Government has expressed interest in organic agriculture as a means to diversify agriculture and exports but has not yet included organic agriculture in its national programmes. The Ministry of Agriculture and Primary Industry (MAPI) has worked with vanilla farmers to introduce organic agriculture. In addition to this the MAPI, with funding from The Asian Development Bank, established an Alternative Livelihoods Project (ALP) which became operational in 2006 but was suspended after the Military Coup in that same year. This project would have contributed to strengthening the Fiji Organic Association (FOA), local auditing capacity, legislative requirements and private sector initiatives. Recently, FOA has developed a strategic plan which considers the way forward for the association.

Inspection and certification of organic export products

Certification is carried against IFOAM, Japanese Agricultural Standard (JAS) and the USDA National Organic Program (NOP) organic standards. Certification is done by Australian Certified Organic (ACO), The National Association for Sustainable Agriculture (NASAA) and ECOCERT currently certifies Spices of Fiji Ltd. Some producers are in touch with the Fair Trade Association of Australia and New Zealand (FTAANZ). Biological Farmers of Australia (BFA) had four certified enterprises.

Statistics on certified organic trade are limited, but exports include: nonu (and other nonu products), vanilla, virgin coconut oil, fruit puree, nutmeg, cardamom, pepper, turmeric, mace, cinnamon, bananas and banana slices, guava puree, and mangoes. Fiji's virgin coconut oil is produced by many small farmers. There is one producer operating on a larger scale, with production of about 200 tonnes a year, although it should be noted that large quantities of oil produced in Fiji are not virgin coconut oil according to APCC specification, but is considered as high quality copra oil. This operation is based on a long-established commercial coconut plantation in Taveuni all virgin coconut oil coming from this plantation is exported into the organic food market. Due to the size of this plantation, the production process is highly mechanized (Kad and Weir, 2008). Fiji is in an advantaged position with regards to other PICs due to good air links with major international markets.

Domestic market for organic products

There are a few shops in Suva that stock organic products such as Heinz baby foods, Organic marmalades and pasta sauce, rice milk and sultanas. There is also the ROC street market which is quite small and takes place occasionally; one can find organic produce amongst other goods and crafts. In addition to shopping markets Fiji, like the rest of the Pacific Islands, has a burgeoning tourism industry with potential entry points for organic products. An example is The Musket Cove Resort on Malolo Lailai Island which provides organic, fresh produce grown on its own farm on the island. The hotel has not actively explored purchasing additional produce from growers on the mainland. The Shrangri-la's Fijian Resort on Yanuca Island (a much larger hotel) on the Coral Coast is considering buying organic products. In addition to this, Fiji has had great success with its domestic sales of virgin coconut oil, largely due to its burgeoning tourism industry as tourists appreciate cosmetic products and high-grade soap that is produced with virgin coconut oil. The surge of fuel costs (hence airfreight costs) is triggering the search for hotel industry marketing alternatives and value addition for organic papaya.

Certified organic products and trade in Fiji

Item	Production	Export	Local market	Value-added
Bananas and banana slices	X	X		
Cardamom	X	X		
Cinnamon	X	X		
Cosmetic products with virgin coconut oil	X		X	X
Fruit puree	X	X		
Guava puree	X	X		
Mace	X	X		
Mangoes	X	X		
Nonu juice and products	X	X		
Nutmeg	X	X		
Pepper	X	X		
Soap with virgin coconut oil	X		X	X
Turmeric	X	X		
Vanilla	X	X		
Virgin coconut oil	X	X	X	

Research, training, extension and awareness for organic agriculture

Several organizations in Fiji are carrying out organic agriculture related projects, including the Secretariat of the Pacific Community (SPC) and its Land Resource Division. SPC is based in Fiji and has also played an important role at the national level. SPC is currently developing natural fertilizers from fish waste. In addition to this, SPC plans to write and publish a series of pamphlets on the production of organic products including papaya, ginger, selected herbs, spices and essential oil plants. This is known as the FACT Project - Facilitating Agricultural Commodity Trade - which is based at SPC headquarters in Suva.

The Ministry of Youth, Employment Opportunity and Sports and the Japanese Organization for Industrial, Spiritual and Cultural Advancement (OISCA) developed an educational program on organic agriculture (January 1990 through March 2005). In 1991, the Government established the National Youth Training Camp (NYTC) which is a training farm established to upgrade vocational, leadership and management skills.

In 2003, the Fiji Organic Association (FOA) was established, with Mr Sant Kumar of Nature's Way Cooperative Ltd. As its first President. The main objects of FOA are to promote organic agriculture and develop organic industry through providing training, information and services. In addition to this FOA seeks to promote certified organic products in the domestic and international markets and to organize certification and auditing of member enterprises. In addition to this FOA encourages gender equality and is particularly interested in exploring fair trade opportunities. FOA is endeavouring partnership with a number of certifiers in order to strengthen services and cost-effectiveness on a regional basis, as well as working with SPC and BFA to develop training activities. FOA has been an IFOAM member since 2005 and has participated in international organic events such as the BioFach trade fair and the IFOAM World Congress in Adelaide.

Also raising awareness about organic agriculture is The Foundation for the Peoples of the South Pacific in Sogatoka which is running a waste management project incorporating organic farming systems. There is also the National Food and Nutrition Centre which is promoting organic farming in home-gardens.

3. Kiribati

Kiribati is made up of 33 atolls with a total population of 90 000 people. Kiribati has limited natural resources with tourism providing one-fifth of the gross domestic product (GDP). In terms of agriculture, most of the farmers are not using chemicals and are instead using natural agricultural inputs (Mapusua and Maccari, 2007).

Conventional Exports (2006)[6]

Item	Quantity (tonnes)	Export Value (US$1 000)
Copra	5 600 F	2 000 F
F=FAO estimate		

Government policy for organic agriculture

There is a law that prohibits the use of chemical fertilizers. Farmers wanting to use chemical fertilizers have to ask permission. The Ministry of Environment, Lands and Agricultural Development (MELAD) is teaching farmers how to use organic compost and working to increase awareness about environmental and health damages from chemical pollutants. The Kiribati Agricultural Division (KAD) focuses on combating food security, generating farmer's income, reducing food imports, promoting local foods and increasing living standards. The Government assisted in establishing Kiribati Organic Farmers Association (KOFA) and is now seeking donors to support KOFA activities.

Inspection and certification of organic export products

The Kiribati Organic Farmers Association (KOFA) had been working with Research Extension and Training in Agriculture (IRETA) to develop organic certification.

Research, training, extension and awareness for organic agriculture

The main group promoting organic agriculture is the Kiribati Organic Farming Association (KOFA). KOFA was first established in June 2005 as an outcome of an organic workshop organized by the Institute for Research Extension and Training in Agriculture (IRETA) and the Kiribati Agriculture Division (KAD). At the commencement there were less then 20 members but as of 2006 membership had increased to 1 228 people, of which 413 were farmers on South Tarawa (government centre) and the rest were farmers from the 14 outer islands (Tofinga, 2006). KOFA shares the same mission, vision and objectives as the KAD, which focus on combating food insecurity, generating income for farmers, reducing food imports on products that can be produced locally, promoting local foods and raising living standards. KAD has allocated an office space for KOFA as well as a phone, transport once a week and for KOFA to make compost for sale on its premises.

[6] FAOSTAT http://www.fao.org/corp/statistics/en/

4. Niue

Niue is the world's largest upraised coral atoll and has a population of about 2 000 people. The main economic activities are agriculture, telecommunications and tourism. The fertility of the soil is lacking as well as quite porous and alkaline in nature, making it difficult for most plants to grow. The average farm size is 0.2 hectares with small scale farmers typically practicing slash and burn agriculture (though this method has been reduced significantly over the years) to clear their land.

Conventional Exports (2006)[7]

Item	Tonnes	Export Value (US$1 000)
Bananas	120 F	38 F
Fruit juice	4 F	9 F
Fresh vegetables	4 R	8 R
R=Trading partner estimates	F=FAO estimate	

Government policy for organic agriculture

The development of organic agriculture is seen by the Government as a priority, so as to achieve a greater degree of economic self-reliance through stimulating private sector development (Tofinga, 2006). The Department of Agriculture, Forestry and Fisheries (DAFF) encourages sustainable systems and environmentally friendly agricultural practices which have been promoted through the Niue National Strategic Plan and the Niue Environmental Act (Halavaka ke he Monuina Plan) of 2004, which refers to all agriculture development projects focusing on organic agriculture. Prior to this the National Biodiversity Strategy and Action Plan (NBSAP) was approved by the Cabinet in 2001, which supports organic farming as a way to mitigate land degradation. Also the Niue Integrated Strategic plan 1999-2003 identified organic agriculture as a means of diversifying market opportunities through concentrating on high value crops and value adding processes.

The Government has the vision to declare Niue an Eco-Nation, initially targeting 2010; this date has now been extended for 5 to 10 years. The objective is "to facilitate the development and adoption of organic production management strategies, certification, and business and marketing programmes, promote organic farming principles, and the underlying benefits such as economic gains, healthy living, green environment, and ultimately to achieve Niue's goal of Eco-Nation by 2010."

To do that the Government supports NIOFA's "Ultimatum for Niue Eco-nation by 2010". Both Niue and New Zealand governments provide financial assistance to the Organic Facilitator plus annual audit visits and certification, which is undertaken by BioGro, New Zealand. Together with NIOFA, the Government is also implementing campaigns and educational activities: promotion and awareness programmes through radio and TV and educational programmes targeting Primary Schools. An organic farming policy is currently been drafted.

[7] FAOSTAT http://www.fao.org/corp/statistics/en/

Inspection and certification of organic export products

Since 2001, Niue Island Organic Farmers Association (NIOFA) in coordination with BioGro New Zealand has been running group certification programmes and workshops to outline standards and requirements. In 2006, after the BioGro annual audit, 14 farmers received full organic certificate status. NIOFA has also created and is managing the Niue Organic Certification Authority, a certification body accredited by BioGro: 41 Farmers and two exporters have been certified. The two main crops under organic certification for export are noni and vanilla (Vinning, 2008). Tahitian vanilla has been cultivated on Niue for a number of years with sales conducted between farmers and a few local business people who then sell the beans in New Zealand. Currently, the SPC has supported an expert from Tahiti to assist the farmers with their vanilla harvest (in 2009). Niue is also reported to be producing virgin coconut oil.[8]

In addition to the group certification which NIOFA participates in, the Vaiea Nonu Farm, jointly owned and managed by the Government and Reef Group (a New Zealand registered company). The Vaiea Nonu Farm is a total area of 350 acres (in hectares please), of which 120 is planted with 22 000 nonu plants with future plantings planned for the remaining acres. Vaiea Nonu Farm receives certification from BioGro (Tofinga, 2006).

Domestic market of organic products

Crops that are currently organically certified and sold locally are coconuts, limes, passion fruit, bananas, avocados and vegetables. They are sold at the market in Alofi, supermarkets, hotels, and also to people on yachts.

Certified organic products and trade in Niue (expressed in tonnes)

Item	Production	Export	Local market
Avocados	0.2		0.1
Bananas	1		0.5
Coconut	2	1	1
Limes	0.2		0.1
Noni	4	4	
Passion fruit	0.05		0.05
Vanilla	0.4	0.4	
Vegetable	1.5		1.5

Research, training, extension and awareness for organic agriculture

The Niue Island Organic Farmers Association (NIOFA) is an NGO founded in 1990 by a group of farmers who agreed to adopt and promote the concept of organic farming. Members tend to be retired civil servants and some current senior civil servants with farm areas ranging from 0.25-5 ha (Mapusua and Maccari, 2007). The Government of Niue has signed a Memorandum of Understanding with NIOFA to supply NIOFA with office space at DAFF throughout which DAFF will act as technical advisors for NIOFA projects.

NIOFA has led a number of workshops and has produced video tapes on organic farming to share the benefits and raise awareness and was asked by the government to introduce

[8] A. Tafuna'i, personal communication, March 2009.

alternative pesticides, herbicides and fertilizers to replace the synthetic chemicals currently used by the farmers. With the help of funding from the SPC and DAFF, NIOFA has built a 20x6 meters organic vegetable garden to help with the educational work that they are doing at schools. NIOFA has fortnightly radio programmes and organizes village and national days of awareness promoting organic agriculture. NIOFA has expressed their interest in exploring possible Fair Trade initiatives.

A feasibility study conducted with support from NZAid provided three major recommendations for the development of an Organic Industry Development Project in Niue focused on production, certification and marketing. Other associations working on organic agriculture are: The Young Farmers Group, Mutahefonua: Niu-Gro, International and Matukuhifi Organic Producers Association.

5. Papua New Guinea

Papua New Guinea (PNG) consists of a "mainland" and a collection of over 600 islands with a total population of 5.1 million people, with 80-85% living in rural areas. The agriculture sector represents the main part of the PNG economy constituting a livelihood for 85% of the population. Smallholders grow food for home consumption and local markets but are also responsible for producing 80% of the coconuts, 75% of the coffee, 70% of the cocoa, and 25% of the palm oil as well as nearly all the spices, herbs and aromatic plants (Mapusua and Maccari, 2007).

Conventional Exports (2006)[9]

Item	Quantity (tonnes)	Export Value (US$1 000)
Palm oil	362 300	140 729
Coffee, green	52 300	110 266
Cocoa beans	44 000	66 880
Coconut (copra) oil	41 500	19 763
Palm kernel oil	28 500 *	17 000 F
Rubber, natural dry	5 390 R	9 011 R
Tea	6 600	6 937
Vanilla	235 R	3 455 R
Hides	39 R	3 237 R
Copra	12 700	2 716
R=Trading partner estimates	F=FAO estimate	* = Unofficial figure

Government policy for organic agriculture

The Department of Agriculture and Livestock (DAL) promotes organic agriculture, which is reflected in several policies. DAL and the National Institute of Standards and Industrial Technology (NISIT) received advice from GTZ/Protrade consultants (1994-1996) in order to develop national standards and a control system for organic agriculture, however, little progress has been made since then. From 1997-1999, DAL conducted a study on the state of organic production and export potential. In August 2000 DAL submitted a proposal to the Government to create an association for organic farmers, which would function as the national organic certification body. In principle the association was approved, however the needed budget was not approved. In the last year, meetings of the organic movement have

[9] FAOSTAT http://www.fao.org/corp/statistics/en/

been held and an Organic Tak Force has been established with representatives of 10 public and private organizations; the Task Force has initiated developing a Strategic Organic Plan.

Inspection and certification of organic export products

Certified organic products are mainly for export, for which international standards (European Community Regulation) are applied. The two certification bodies for organic export products are Australian Certified Organic (ACO) and National Association for Sustainable Agriculture Australia (NASAA). There is a local inspector, Lilo Massing, who inspects crops for NASAA.

The products currently certified for export are coffee, cocoa, sweet potatoes, bananas, passion fruit, coconut, papaya, pineapple, taro, cassava, chilli, ginger, black pepper, Chinese chilli, chives, cinnamon, coriander, curry-leaf tree, fennel, honey, lemon balm, lemongrass, mixed herbs, mixed spices, nutmeg, oregano, parsley, peppermint, sage, sweet basil, turmeric, white pepper, cardamom, tamanu nuts (*Calophyllum inophyllum)* and galip nuts *(Canarium indicum)*. In addition to this, a series of aromatic plants are grown organically including betel leaf, betel vine, citronella grass, eaglewood, neem, rose geranium, rosewood, sandlewood and vetiver grass. All of these products are marketed through Pacific Spice (with coffee also sold through additional sources) which is certified by NASAA. NASAA also certifies Escential Extracts Limited as a Producer-Grower Group. Escential Extracts is a joint venture between Pacific Spices and Agmark Pacific Ltd (Vinning, 2008). Agmark Pacific Ltd. is the biggest grower and exporter of cocoa in PNG. The company was exporting organic cocoa for 18 months in 1997/98, for Kaoka, a French company. The cocoa was certified by NASAA but because of the high cost of certification and because they did not receive the premium price they stopped selling organic cocoa (Mapusua and Maccari, 2007). According to Vinning (2008) Vanuatu is now again exporting cocoa to France through Kaoka.

There are many coffee producers (Hidden Valley Plantation, Coffee Connections Limited, Big Bean Coffee Ltd., Yha Hauka Kopi Ltd., Kokoda Organic) which are certified by NASAA except Arabicas Pty Ltd which is certified by ACO and Monpi Coffee Exports which is certified by CERES. The CERES certification is an environmental certification and does not necessarily denote organic agriculture practices. In PNG, CERES represents 198 growers on 194 hectares of land in the Wau area. Monpi Coffee Exports additionally has certification for CAFÉ Practice which is owned by Starbuck as well as UTZ and Fair-trade. Among all Pacific Island Countries, Papua New Guinea is the only country that has been able to access FLO Cert certification for fairtrade coffee and cocoa.

The only specific data on organic fruit being produced was on pineapples (variety *cayenne*). Production is undertaken on the estate of *Sogerie Spices*, 40 km east of the capital, Port Moresby, near the town of Sogerie, at 1 000 m altitude. Pineapples are produced on an area of 25 hectares, and are rotated with groundnuts. The annual yield is about 100 tonnes, of which 40 tonnes are sold as whole fresh fruits and the remaining 60 tonnes are processed to approximately 30 000 litres of juice, some of these are sold on the export market while others are sold locally without a price premium, as indicated below (Anon, 2001b).

Domestic market of organic products

Local residents have expressed their interest in organic foods and there is an organic market held every Sunday at Pacific Adventist University, about 20 minutes outside of Port Moresby.

Minimal organic products can be found in supermarkets, items such as organic baby food are available. Local organic coffee is also sold in some markets. Pineapples (organically grown but not certified) are sold locally to supermarkets and hotels in Port Moresby, and pineapple juice is sold to Air Niugini. Both fresh pineapples and juice are sold as conventional, without a premium price.

Certified organic products and trade in Papua New Guinea

Item	Production	Export	Sold locally
Bananas	X	X	
Cassava	X	X	
Cocoa	X	X	
Coconut	X	X	
Coffee	X	X	X
Galip nuts *(Canarium indicum)*	X	X	
Honey			
Papaya	X	X	
Passion fruit	X	X	
Pineapple[10]	100 tonnes	X	X
Sweet potatoes	X	X	
Tamanu nuts *(Calophyllum inophyllum)*	X	X	
Taro	X	X	
Herbs and spices including: chilli, coriander, cinnamon, Chinese chilli, chives, cardamom, curry leaf, ginger, fennel, lemon balm, lemon grass, nutmeg, white/black pepper, oregano, parsley, peppermint, sage, sweet basil, turmeric	X	X	
Aromatic plants: betel leaf, betel vine, citronella grass, eaglewood, neem, rose geranium, rosewood, sandlewood, vetiver grass	X	X	

Research, training, extension and awareness for organic agriculture

The Subsistence Agriculture Improvement Programme (SAIP) is the main organic agriculture training programme for young people in the Morobe Province. Students are taught both theory and practical information to help them start their own organic agriculture projects. The training course includes compost preparations and application, soil conservation methods, pest and disease control and cooking lessons. Throughout the course participants are encouraged to utilize traditional food crops.

The National Agricultural Research Institute (NARI) is conducting research on natural pesticides using locally available resources. The Fresh Produce Development Company Ltd.

[10] This information comes from a 2001 report titled World markets for organic fruit and vegetables (FAO, CTA, International Trade Centre).

(FPDC) is incorporating organic and other environmentally friendly farming principles in training programs and organizing field days to teach about organic farming.

Since May 1987, a Japanese NGO for Industrial, Spiritual and Cultural Advancement (OISCA) has been assisting youth in using the organic management approach. The OISCA Eco-Tech Training Centre is a training farm where the trainees learn organic farming methods. Some PNG producer cooperatives are interested in Fair Trade certification and have approached FTAANZ and Oxfam Australia.

6. Samoa

Samoa consists of two main islands and several smaller adjacent islands with the total population being approximately 181 000. Around two-thirds of Samoan households rely on a mixture of subsistence agriculture and cash income, with subsistence agriculture contributing to about half of the total Samoan agricultural output (Anon. 2008). Agriculture, as a percentage of GDP has decreased significantly due to cyclone damage in the early 1990's which destroyed 20% of the coconut and cocoa trees on the plantations and the taro leaf blight which began in 1993. More recently, between 1998 and 2001 prices have more than halved for copra and coconut, contributing further to an already fragile economy (Mapusua and Maccari, 2007). The contribution of agriculture to GDP was approximately 7 percent in 2007.

Conventional Exports (2006)[11]

Item	Quantity (tonnes)	Export Value (US$1 000)
Fruit juice	871 R	1 536 R
Beer of barley	1 686	1 253
Taro (cocoyam)	207	214
Coconut	1 074 R	163 R
Coconut (copra) oil	110 R	63 R
Coconuts, desiccated	75 R	58 R
Cake of copra	554 F	43 F
Papaya	5 F	19 F
Non-alcoholic beverages	24 R	15 R
Fruit, fresh	12 R	13 R
R=Trading partner estimates	F=FAO estimate	

Government policy for organic agriculture

In August 2006, a Government directive established a National Organic Advisory Committee which is chaired by the Prime Minister. The purpose of the National Organic Advisory Committee is to support and promote the development of organic farming in Samoa. The Government has also offered some financial assistance for the work of the Committee, as well as to Women in Business Development Incorporated (WIBDI) for their ongoing activities. The Committee consists of the Prime Minister, Ministers and CEOs from the Ministry of Natural Resources and the Environment and the Ministry of Agriculture and Fisheries, and the President and Executive Director of WIBDI. The Ministry of Agriculture and Fisheries (MAF) with WIBDI created a Strategic Plan for the Organic Farming Industry in Samoa (2004). The plan provides a medium-term program for the growth of the industry in terms of direction for development and setting out priorities for allocating resources. In addition to

[11] FAOSTAT http://www.fao.org/corp/statistics/en/

this, one of the six goals in the Strategy for Development of Samoa 2005/07 is partnering with the organic industry to accelerate growth. The Ministry of Agriculture, Samoa Organic Farmers Association (SOFA, now absorbed into WIBDI) and Malaefono organic farm signed a Memorandum of Understanding for providing research, demonstration and promotion of organic agriculture, under a regional programme on the "Development of Sustainable Agriculture in the Pacific", which is now completed.

Inspection and certification of organic export products

The certification body present in Samoa is the National Association for Sustainable Agriculture Australia (NASAA). WIBDI is currently the only licence holder for NASAA certification in Samoa; certification relates to specific products grown in defined areas under a grower group scheme. In addition sub-licences for companies: Noni Samoa Enterprises Ltd., STARR Ltd., CCK Ltd., MD's Big Fresh LTD. and the Pure Coconut Oil Company exist with cocoa, noni and virgin coconut oil currently being exported to Europe, Australia and New Zealand and the USA, including American Samoa. Women in Business Development Incorporated (WIBDI) is currently running a trial on organic banana export potential and niche markets are being identified by for Fair Trade labelled coffee, vanilla and ginger. In the case of vanilla, flowering occurred for the first time in 2008, with the first harvest expected in 2009.

Domestic market of organic products

A completed market chain analysis on vegetable farming showed that restaurants and resorts have an interest in organic foods. In addition to this, local residents have expressed an interest in organic foods. An organic farmers market was started in 2007 which is held one Saturday every month in Apia. Malaefono organic farm grows organic products but sells them without certification and a premium price. Sale of virgin coconut oil is gaining popularity at local organic markets. Other products that are grown organically and sold locally are: black pepper, citrus, cocoa, coconut, coffee, ginger, kava, lemongrass, mixed herbs, mixed tropical fruit, mixed vegetables, noni, taro, turmeric and vanilla. These products are being produced by over 300 farms. In mid 2009, a pilot project was started in order to convert to organic a small holder vegetable farmers in a defined area and to connect them to a local tourist resort.

Certified organic products and trade in Samoa

Item	Production	Export	Sold locally
Banana		Trials are underway	
Black pepper	X		X
Citrus	X		X
Cocoa	X	X	X
Coconut	X		X
Coffee	X	In the planning stage	X
Ginger	X	In the planning stage	X
Kava	X		X
Lemongrass	X		X
Mixed herbs	X		X
Mixed tropical fruit	X		X
Mixed vegetables	X		X

Noni	X	X	X
Taro	X		X
Turmeric	X		X
Vanilla	X	Trials are underway	X
Virgin coconut oil	X	X	X

Research, training, extension and awareness for organic agriculture

Women in Business Development Incorporated (WIBDI) was established in 1991 by a group of women who were discouraged by difficulties for women in establishing small business, such as securing credit.. Today, WIBDI is active in 200 rural villages across Samoa, supporting a range of community-based projects aimed at alleviating poverty, creating sustainable village economies and revitalizing the agricultural sector. WIBDI seeks to: identify opportunities for income generation and provide rural families with ongoing training, supervision, support and access to microfinance; assist with organic and fair trade international standards; and facilitate links between rural communities and global markets. In light of these objectives, WIBDI's main undertaking is the Virgin Coconut Oil Project which now involves 9 organically certified farmers and their families and will be expanded to 18 by 2010. WIBDI acts as a liaison for rural producers in Samoa and exports; virgin coconut oil is being exported to a natural cosmetics company, The Body Shop, since 2007. WIBDI has been working with Oxfam New Zealand and the Tindall Foundation to receive Fair Trade certification for vanilla, ginger and cocoa. Initially, WIBDI pressed the Fair Trade Labelling Association to develop pricing and standards appropriate to Pacific producers.

In February 2003, the Minister and a group of people from the Ministry of Agriculture and Fisheries (MAF) invited the Executive Director of WIBDI on a tour of organic farms, facilities and research organizations in New Zealand in search of markets and research possibilities. The outcome was a list of recommendations, including a closer working relationship between MAF and WIBDI.

The Food and Agriculture Organization of the United Nations funded a Technical Report on "Organic Farming in Samoa" in 2000, and commissioned a handbook for organic farmers in the Pacific, which was written by WIBDI and based on their experiences. In 2009, FAO started a project seeking to build capacities in organic production, processing and trade of organic and fair trade coffee, fruit juices and virgin coconut oil; WIBDI is the main partner for this project.

The Global Environmental Fund is supporting organic agriculture through funding eight organic vegetable gardens. Other organic agriculture efforts in the past have been led by Pacific Organic Producers Association (POPA) which was established by IRETA in 1994 and is no longer in existence, and Samoan Organic Farmers Association (SOFA) which was started in 2000 which has now been absorbed into WIBDI.

7. Solomon Islands

The Solomon Islands archipelago is comprised of six large and twenty smaller islands and hundreds of small islets and coral reefs with a total population of 466 194. People are principally engaged in subsistence agriculture with 90% of the population living in rural areas. Logging is the main revenue earning activity, followed by fishing. Most farmers do not use fertilizers because of their high costs and general unavailability but large plantations (of

more than 1 000 hectares) tend to use commercial fertilizers and chemicals (Mapusua and Maccari, 2007).

Conventional Exports (2006)[12]

Item	Quantity (tonnes)	Export Value (US$1 000)
Cocoa beans	4 379 R	5 963 R
Palm kernels	6 800 F	2 500 F
Copra	6 832 R	1 529 R
Palm oil	1 000 R	471 R
Coconut (copra) oil	253 R	182 R
Cake of copra	509 R	53 R
Coconuts	76 R	21 R
Tobacco products	2 R	21 R
R=Trading partner estimates	F=FAO estimate	

Government policy for organic agriculture

The Department of Agriculture and Livestock (DAL), along with some private growers and traders, have expressed their interest in organic agriculture. Commodities Export Marketing Authority (CEMA) sees organic produce as a valid marketing strategy for niche markets. CEMA is therefore considering organic certification for some commodities such as coffee, spices, ngali nuts (*Canarium sp*.), virgin coconut oil and honey.

Inspection and certification of organic export products

The National Association for Sustainable Agriculture, Australia (NASAA) is the certifying virgin organic coconut oil, the only product being certified and exported. Currently, Kastom Gaden Association is working on vegetables, though not certified, by training 80 growers, as well as schools and student, on converting to organic management.

Domestic market of organic products

There is an organic market that occurs six days a week at the Honiara Central Wholesale Market. On the islands of Isabel, Guadalcanal and Small Malaita, organic coffee is being produced for the domestic market.

Certified organic products and trade in the Solomon Islands

Item	Production	Export	Sold locally
Virgin coconut oil	X	X	
Coffee	X		X

Research, training, extension and awareness for organic agriculture

The Appropriate Technology for Community and Environment (APACE) established the Kastom Garden Programme which is working on issues related to food security, land degradation and community health. Kastom Garden is in Honiara and is working in collaboration with rural farmers and groups throughout the country promoting the use of

[12] FAOSTAT http://www.fao.org/corp/statistics/en/

organic methods and fertilizers. The other organizations that are involved in organic agriculture are the Fiu Rice Organic Farming in the Malaita Province, the King George VI School Vegetable Farm in Honiara and the Rural Training Centres which are present in all the Provinces. The Solomon Islands also has the "*The Natural Way of Growing Food for the Solomon Islands"* by Joini Tutua (with Tony Jansen), which is a guide to growing food organically. The document is only published in English (not Solomon Pijin) but has illustrations that make it easy to understand.

8. Tonga

The country is comprised of 170 small low-lying coral and volcanic islands of which 36 are inhabited with a total population of approximately 100 000. The Tongan economy is primarily based on agriculture, fisheries and tourism with agricultural products comprising over 90% of the exports. Approximately 60% of the population depends on agriculture for their livelihood. The majority of farmers practise mixed cropping system agriculture with coconut inter-cropped with either kava or coffee and taro. The average size of small farms is 1 hectare, while large scale farms are approximately 10 hectares (Mapusua and Maccari, 2007).

Conventional Exports (2006)[13]

Item	Quantity (tonnes)	Export Value (US$1 000)
Pumpkin, squash, gourds	10 614	2 748
Vegetable prod. fresh/dried	48	409
Fruit juice	171	352
Yams	573	296
Vanilla[14]	5	172
Cassava, dried	346	108
Coconuts	114	68
Vegetables, fresh[15]	22 R	27 R
Coconuts, desiccated[16]	61	14
Roots and tubers	7	2
R=Trading partner estimates		

Government policy for organic agriculture

The Government has proposed a structure for the National Organic Certification (NOC) system in 2001 through the establishment of an Organic Coordination and Development (OCD) Committee. The OCD Committee is responsible for planning, developing and coordinating all the activities of the NOC System. The committee consists of the Director of Agriculture (Chairman), Head Corporate Services Division, Ministry of Agriculture, Food, Forestry and Fisheries (MAFFF) Deputy Chairman, Head of Quarantine and Quality Management Division, MAFFF Head of Research and Extension Division, MAFFF Secretary for Labour, Commerce and Industries, a representative of the Tonga Chamber of Commerce and Industries, and a representative of Tonga Organic Association (TOA). The Government, with money from the Stabex Fund, to be administered by the Tongan Ministry of Agriculture, Food, Forestry and Fisheries, plans to re-establish organic vanilla certification through a US$2.5 million project, as well as to intensify production of vanilla and kava. The

[13] FAOSTAT http://www.fao.org/corp/statistics/en/
[14] This is data from 2005, there was no data from 2006
[15] *Ibid.*
[16] *Ibid.*

representatives of the MAFFF present at the Heads of Agriculture and Forestry Services meeting (Fiji, September 2006) expressed their interest in Fair Trade certification for export purposes. The Tonga Organic Association has recently been constitutionally revived with elected members under the chair of the Minister of Agriculture and Fisheries, and with the participation of 10 small farmers and 3 non-governmental organizations.

Inspection and certification of organic export products

With bilateral assistance from New Zealand in 1996/97, trainings were conducted to get BioGro certification for squash, vanilla, kava and aloe vera. Unfortunately the funding from New Zealand stopped after two years when the Tonga Organic Association (TOA) no longer had funds to continue. Tonga is producing virgin coconut oil.[17] In 2009, WIBDI from Samoa visited Tonga National Youth Congress, in view of setting-up Internal Control Systems in 2 island groups; mapping of small farmers is foreseen, including 403 small vanilla farms in 'Eua and 10 small farms in Vava'u, Tongatapu. Meetings have also been made with small farmers to look at prices for fair trade banana and coconut.

Research, training, extension and awareness for organic agriculture

The main organization advocating for organic agriculture is the Tonga National Youth Congress who is currently establishing an internal control system for group certification. The Tonga Organic Association (TOA) is supporting organic agriculture and after some initial difficulties because of funding shortages they have been re-established and a new committee has been elected to lead the organization. TOA is represented in the Organic Coordination and Development (OCD) Committee.

An educational initiative to promote organic agriculture, called "*Walk the Organic Talk: Organic Farm Visits* " targets tourists (agri-tourism), local farmers (field days and farmers school), students, teachers and youth groups. The initiative also promotes inter-island visits for other PIC farmers. The Tonga Development Trust initiated a programme to look at the effects of chemicals in Tonga in addition to advocating for organics. Women in Business Development Incorporated (from Samoa) has assisted with mapping vanilla farms in Tonga in preparation for anticipated certification by NASAA, with the payment of certification costs coming from Stabex Fund.

9. Vanuatu

Vanuatu consists of over 80 islands with a population just over 200 000 people. Agriculture, together with forestry and fisheries contribute significantly to the living standards of Vanuatu. Approximately 80% of the population are subsistence farmers and live in rural areas. For the most part farmers are not using chemicals and are growing mixed crops on small plots of land. There are also some large scale cattle ranches and cocoa plantations on the islands which are usually inter-cropped with coconut trees (Mapusua and Maccari, 2007).

[17] A. Tafuna'i, personal communication, March 2009.

Conventional Exports (2006)[18]

Item	Quantity (tonnes)	Export Value (US$1 000)
Boneless beef and veal	1 049	2 979
Copra	12 862	2 916
Cocoa beans	1 815	2 494
Coconut (copra) oil	2 320 *	1 740
Cake of copra[19]	7 802	1 064 R
Roots and tubers	69	109
Dried, salted cattle hides[20]	28 R	92 R
Vanilla	1	76
R=Trading partner estimates	*=Unofficial figure	

Government policy for organic agriculture

The Government is subsidizing livestock certification for organic beef as well as high quality, grass-fed beef.

Inspection and certification of organic export products

Currently BioGro, ECOCERT and Agriquality are certifying producers in Vanuatu. BioGro is certifying VAL Pacific's organic beef which is exported to Australia. There is an abattoir and four farmers that are certified, (including two under the same management system), located on the island of Efate. In addition to this on Santo there are much larger beef farms but they are not certified. Currently they sell "grass-fed" beef which is beef produced according to organic standards but lacking certification. The total number of heads on these farms is over 15 000 (Tofinga, 2006). There are markets for grass-fed beef in Papua New Guinea, Fiji, Samoa and Tonga. ECOCERT is certifying cocoa for Kaoka through the Vanuatu Organic Cocoa Growers Association. Kaoka has one buyer in France who pays a premium for the cocoa which is sold un-graded. In 2007, 3 000 producers from the cooperative exported 313 tonnes to the buyer (Vinning, 2008).

Since 1997 Venui Vanilla has been organically certified and a member of the International Federation of Organic Agriculture Movements (IFOAM). In 2006, Venui Vanilla was certified by Agriquality, New Zealand. According to Vinning (2008), Venui Vanilla is now certified by BioGro. Venui Vanilla works closely with the Farmer Support Association and represents the Vanuatu Spice Network which is a group of more than 200 organic certified producers spread throughout the Vanuatu Islands. The certification covers not only the Venui Vanilla farm but also its processing plant. Venui Vanilla produces vanilla, vanilla products, black and white pepper and pepper products, turmeric, cardamom, ginger, lime basil, sweet potato and chilli. It should be noted that efforts are being made to expand the organic vanilla production into Tanna because climate change-induced rainfall has adversely affected flowering on Santo.

[18] FAOSTAT http://www.fao.org/corp/statistics/en/

[19] This is data from 2005, there was no data from 2006

[20] *Ibid.*

Domestic market of organic products

There are very few organic products in supermarkets in Vanuatu but there is a limited selection of organic baby food. As for the hotels and tourism industry (which had almost 170 000 visitors in 2007) there is a general willingness to pay more for high quality produce, coffee and spices (especially pepper) although all hotels reported no interest in organic food (Vinning, 2008).

Certified organic products and trade in Vanuatu

Item	Production	Export	Local market
Beef	185 tonnes	Australia	
Black and white pepper and pepper products	1 tonnes	Australia New Caledonia	X
Cocoa	313 tonnes	France	
Ginger	X	X	
Herbs and spices: chilli, cardamom, lime basil, turmeric	X	X	
Sweet potato	X	X	
Vanilla and vanilla products	600 kg	Australia, Japan, New Zealand	
Virgin coconut oil	X	X	

* Organic beef is being exported without premium to a conventional market.

Research, training, extension and awareness for organic agriculture

The Farm Support Association (FSA) was established in Vanuatu in 1983 and seeks to teach its members about commercial and organic agriculture (although the actual certification process is done by Venui Vanilla who buys the products from the farmers who belong to FSA. FSA has a number of ongoing activities such as organic farm assessments, internal control for organic certification of farmers groups and soil improvement workshops, as well as supplying members with technical information and training material, including work together with rural training centres seeking to supply local foods. Such training activities are supported by NZAid.

Venui Vanilla has produced a series of pamphlets in Bislama on the production of organic vanilla. The pamphlets not only explain precise organic production techniques, including curing of the vanilla bean, but also articulate the organic philosophy that underpins production as well as a holistic perspective of the vanilla plant. This is an initiative led by the private sector.

The Vanuatu Agricultural Research and Training Centre, is being assisted by CIRAD (*Centre de Cooperation Internationale en Recherche Agronomique pour le Developpement*) and researching organic cocoa, natural control of coconut insects and the local nangai nut.

III. ORGANIC AND FAIR TRADE MARKETS FOR COFFEE, COCOA, VANILLA, VIRGIN COCONUT OIL AND PEPPER

1. Coffee

Coffee is one of the most important commodities on the world market and is generally sold green and is roasted later on. The production of this small bean represents the livelihood of millions of people, is produced and exported by nearly 60 nations and is critical to the economies of several of them. Globally, more than 20 million families rely on coffee for their income and 70% of all coffee grown is done so on small-scale family farms. According to the International Coffee Organization (ICO), world exports of green coffee in 2006 amounted to 5.3 million metric tonnes, valued approximately at US$10.85 billion. The value of exports for 2007 is expected to exceed US$12 billion. Despite steady global consumption rates of coffee, many producers receive only US$0.30 per pound while export prices are over three times higher (Giovannucci, Lui and Byers, 2008). Low prices are only part of the challenge that small farmers face. World conventional coffee markets are highly competitive and typically cyclical with recurring patterns of oversupply that make prices volatile and producer incomes insecure.

Global certified coffee market

Although the conventional coffee market shows little growth, this is far from the case for certified coffees which have a strong and steadily growing demand. In North America, for instance, the market for certified coffee has been growing at double digit rates since the year 2000 (it is important to note that the volumes are smaller for certified coffees so large growth rates are slightly less significant). In 2006, certified coffees, commonly defined as being economically, environmentally and socially sustainable and certified by an independent third party, made up approximately 4 percent of global green coffee exports, more than 220 000 metric tonnes. Estimates for the same year in North America indicate that the imports of certified coffees rose by approximately 110 000 metric tonnes, accounting for nearly 8 percent of the market and a total export value estimated at approximately US$330 million. Certified coffees include organic, Fair Trade, Rainforest Alliance, Bird Friendly, Utz Certified and Starbucks C.A.F.E., with one and two million farms participating in one or more of these certification schemes (Giovannucci, Lui and Byers, 2008).

Calculating estimates of the quantities of certified coffees marketed can be difficult because only a portion of the coffees that are certified under a sustainability programme are actually sold under a certified seal. This being said, total certified production volumes may be substantially higher but all figures provided relate to the quantities actually purchased as certified.

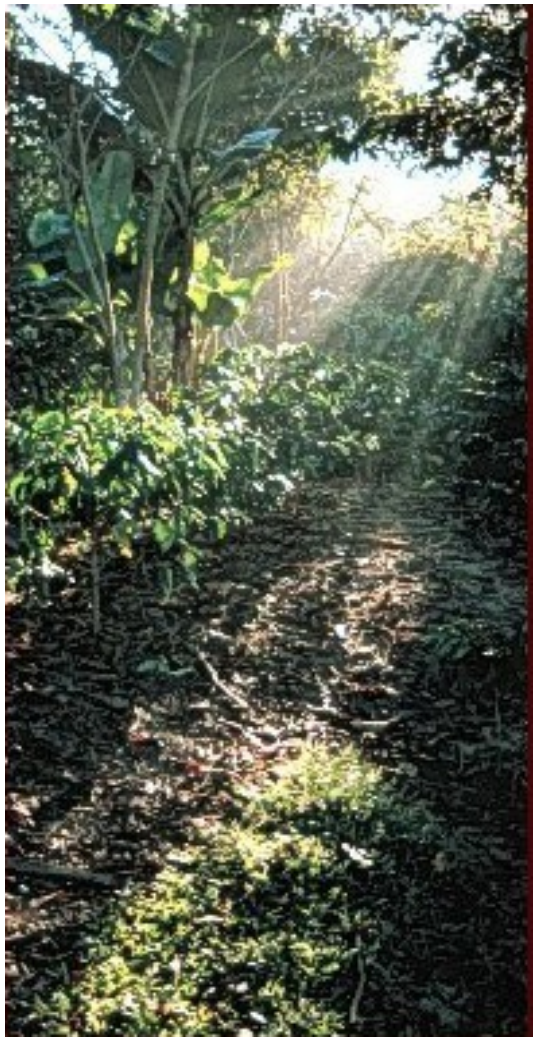
Global organic and fair trade coffee markets

World sales of certified organic coffee exceeded 67 000 metric tonnes in 2006. Organic coffee represents approximately 2 percent of the total North American coffee market in volume. Certified organic coffee is exported from more than 30 countries, with most of the global supply coming from Latin America. The largest exporter in Africa is Ethiopia and in Asia, Papua New Guinea and East Timor (Giovannucci, Lui and Byers, 2008).

In 2006, the sale of certified fair trade coffee worldwide reached 52 077 metric tonnes (a 53 percent increase from 2005), with nearly half of this volume sold in North America. Fair trade certified coffee imports account for some 2 percent of the total green US coffee imports. Fair trade coffee was produced and exported from 26 countries in 2006. Five countries (Peru, Mexico, Nicaragua, Indonesia and Ethiopia) accounted for two-thirds of all fair-trade coffee imported into the US (Giovannucci, Lui and Byers, 2008).

It is worth noting that there is considerable overlap between organic and fair-trade coffee certification with 78 percent of all fair-trade coffee sold in the United States (and 50 percent in Canada and the rest of the world) is also certified as organic. This reflects a tendency toward double and even triple certifications, a trend with challenging implications for producers (Giovannucci, Lui and Byers, 2008).

This trend toward multiple certifications for a single product remains a double edged sword. The implications of meeting multiple standards can consume a substantial amount of resources (both time and money) and though it ideally serves the producer, multiple certifications do not necessarily guarantee maximum returns. In addition to this it is increasingly important for buyers to place value on the sustainable practices that come with certified coffee rather than simply on the preferred flavour/quality preferences. If there is no correlation made between the price and the producer's sustainable practices, then it becomes inevitably more difficult for the producer to justify their certification. Essentially for demand to continue, it must be driven by informed consumers, who privilege organic farming and fair-trade practices along side quality and taste.



Coffee prices and premiums

Price premiums vary considerably and are contingent on several factors, including quality, reputation of the producer, regional designation, or additional certificates like Fair Trade or Bird-friendly. Organic premiums tend to be part of larger premiums based on the aforementioned criteria. Based on one study in Nicaragua in

2000-2001, it was found that organic coffee was selling for a premium of 54 percent more than conventional coffee. While the actual amount paid has remained somewhat constant, the relative percentage is clearly greater during periods of low prices. Today the organic premium is correlated with quality; therefore high-quality producers receive a larger premium. For 2005 and 2006, the average premium was 20 percent but some Latin American exporters reported premiums between 30 and 40 percent (Giovannucci, Lui and Byers, 2008).

The fair trade system operates differently and guarantees a floor price based on the estimated cost of sustainable production. According to Giovannucci, Lui and Byers (2008) the minimum price ranges from US$1.01 to US$1.21 per pound, depending on the type of coffee and the country of origin. When market prices rise above the minimum price range (US$1.21), a small additional premium is paid. In addition to this, when the coffee is also certified organic, an extra premium of US$0.20 per pound applies. In October 2001 when the market price fell to a record low, the price of fair-trade coffee was 180 percent higher. More recently, with prices remaining above a US$1.00, relative premiums for fair trade coffee remain more modest.

It is important to note that a premium paid by the buyer does not guarantee that it will be received by the producer. As certified coffees move further into main stream distribution and become increasingly part of complex supply chains, the result being less transparent transactions.

Drivers of growth for certified coffee

There has been strong growth in demand for certified coffee, largely due to increased consumer awareness towards social and environmental issues as well as demand for specialty, premium and high quality coffee. Supporting the growth of the certified coffee market has been the role of large private companies marketing and selling various types of certified coffee. The twin drivers have been highly visible retail food chains (i.e. Starbucks and MacDonald's) and main stream supermarkets (i.e. Wal-Mart and Kroger). These private players have facilitated fast-growing consumption of certified, sustainable products and as well as provide considerable opportunity for certified producers. On the other hand, they pose potentially severe challenges to the producers due to the considerable volumes that they purchase and the fact that minor sourcing changes have large and negative impacts on small scale producers.

Coffee supply constraints and opportunities

As mentioned earlier, consistently low prices for conventional coffee is a constraint that is doubly compounded by the highly volatile nature of this commodity, due to its cyclical nature with recurring patterns of oversupply. This implies that it is a potentially very insecure market for producers to enter into, especially if they are not certified or able to offer the consumer a special trait or quality with their product. In favour of coffee production and trade is the fact that tariffs are very favourable for coffee imports. All green and roasted coffees enter the United States and Canada duty free and for most other processed coffee, products the tariff is either zero or very low.

2. Cocoa

Cocoa, native to South America, hails from the foothills of the Andes but today is grown in Africa, Asia, and Central and South America. The World Cocoa Foundation states that there are 5-6 million farmers worldwide and 40-50 million people who depend upon cocoa for their livelihood. Recently there has been increased demand for certified cocoa products, especially chocolate, leading to increased market opportunities. There is a strong demand for high quality products and unlike the coffee market, the cocoa market is currently characterized by undersupply.

Global certified cocoa market

The International Cocoa Organization (ICCO) has determined that the market for certified organic chocolate has grown dramatically in recent years. Global sales of organic chocolate alone (not including other cocoa products) reached US$304 million in 2005, a 75 percent rise since 2002. Europe is by far the largest importer of certified cocoa beans (especially organic) and the largest processor and manufacturer of certified cocoa and chocolate products. The North American certified cocoa market is still young and quite small when compared with Europe but the market is expected to grow an additional 30 percent over the next decade (Giovannucci, Lui and Byers, 2008). There are different forms of cocoa products including beans, liquor, powder, cake, butter paste and chocolate.

It should be noted that there is limited and fragmented data for certified cocoa and the reliability of the few available estimates may be questionable. The data should be considered as indicative estimates only and importance should be given to the general trends.

Organic and fair trade cocoa

There is a critical lack of data on the quantities of organic cocoa marketed worldwide. More studies have been done at production level, but estimates differ across sources. ICCO estimates that production of organic cocoa worldwide exceeded 15 500 tonnes in 2005 while others approximate almost double that (32 000 metric tonnes), although only one third of total output is estimated to have been exported (10 672 metric tonnes). Despite data discrepancies, organic market represents a very small share of the global cocoa market, estimated by ICCO at less than 0.5 percent in 2006. It is difficult to determine the quantity consumed in North America, although it was less than 1 percent in 2001, there has been a sharp demand in recent years with estimates from the Nature Conservancy claiming a 70 percent per year growth of organic chocolate sales, since 2002.

In 2006, world imports of FLO-certified (fair-trade) cocoa almost doubled in one year, reaching close to 11 000 metric tonnes. As is the case with coffee, 80 percent of the fair-trade certified cocoa that was imported into North America between 2002 and 2006 was also certified organic. Imports have risen steadily since FLO certified cocoa was introduced into USA market in 2002, with growth rate reaching 75 percent by 2006 (Giovannucci, Lui and Byers, 2008).

Cocoa prices and premiums

As with many other organic products, the market for organic cocoa has experienced strong price fluctuations. This has been largely due to the small quantities available, the lack of consistency of quality and the irregularity of deliveries. ICCO estimates average price premiums at between US$100 and US$300 per metric tonne at production level. There is a large degree of discrepancies in price premiums which reflect variations in quality and supply chain relationships and the difficulties of estimating premiums along the supply chain.

The pricing with fair-trade cocoa works much the same as with coffee. FLO pricing guarantees a Fairtrade Minimum Price (FOB) and a premium, which is guaranteed at US$1 600 per metric tonne in addition to which buyers also pay a fair-trade premium set at US$150 per metric tonne. If the world market price for the specific origin or type of cocoa bean is higher than the Fairtrade Minimum Price, then the fair-trade price is the sum of the world market price and the fair-trade premium. If the cocoa is also certified and labelled organic, then there is an additional premium of US$200 per metric tonne.

Main drivers of demand growth

The 75 percent increase of certified chocolate consumption between 2002 and 2005 is one of the outcomes of increased consumer awareness about food safety, social concerns and environmental issues as well as the growing demand for specialty, premium, high quality chocolate. Consumers have also begun looking for chocolate products that have a higher percentage of cocoa mass. This trend has been encouraged by studies that espouse the health benefits of consuming dark chocolate as being a preventative measure against cancer because of the incredibly high levels of antioxidants. In addition, governments and development agencies are encouraging farmers to convert to growing certified cocoa, seeing it as in the best interest for the individual and the collective, due to the higher returns for certified cocoa.

Cocoa supply constraints and opportunities

Exporters, certifiers and industry experts agree that the potential for organic cocoa on the market is high but there are many challenges on the supply side relating to quality, cost of certification and the producers' ability to access knowledge of organic supply channels. In addition to this, trade channels will have to be expanded for increased volumes of organic cocoa. Direct trade channels and growth in the processing and manufacturing industry in North America could accelerate considerably the growth of the North American organic cocoa market.

Developing countries seeking to add value to their certified cocoa may benefit from the increased demand for processed products such as chocolate and cocoa butter but it should be acknowledged that high tariffs for processed products might inhibit developing countries who export to USA, while unprocessed cocoa beans are allowed to cross the border duty free. Countries that have the Most Favoured Nation (MFN) status benefit from much lower tariffs in USA.

Another possible constraint is the cocoa pod disease, *Cocoa moniliasis,* which is a challenge specifically for cocoa farmers in Central America.

3. Vanilla

Vanilla is the only edible fruit produced from the orchid plant and is used as a natural food and beverage flavouring, as well as an ingredient in perfumes. The vanilla bean originates from Mexico where there is a special bee that pollinates the plant; most vanilla was grown there until the 19th century. Today, vanilla is grown in many countries located 20 degrees on either side of the equator and generally thrives in hot, moist climates and requires labour intensive hand pollination. Over half of the world's vanilla supply comes from developing economies. Vanilla's high unit value and long shelf-life when cured make it a perfect crop for remote locations with limited or non-existent road and market access. In addition to this, cultivation of vanilla is labour intensive and is therefore well suited to smallholder households. Vanilla grows well in integrated cropping systems (combined with cocoa or other small trees) because it requires both shade and structure to twine its tendrils on.

Global market for natural vanilla

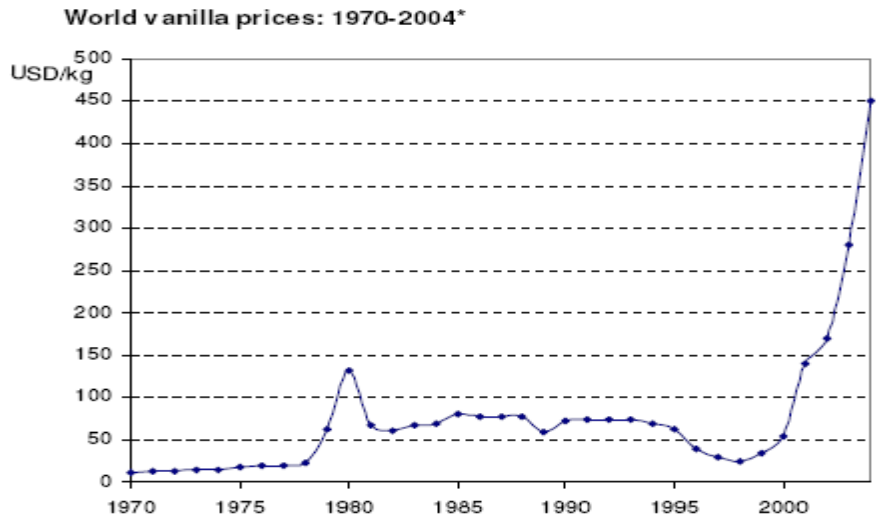
The world market for natural vanilla (i.e. neither synthetic nor certified organic or fair trade) is a very small niche market. According to McGregor (2004) total world consumption of natural vanilla is around 2 500 tonnes, depending on price and availability. Over the last decade, world consumption has oscillated between 1 200 and 4 000 tonnes. The world market for vanilla is highly concentrated, with USA accounting for 62 percent of world consumption. In the USA, natural vanilla accounts for less than 10 percent of the vanilla flavour market, with the rest coming from synthetic vanilla. In Europe the whole-bean market is more substantial. Germany and France constitute major markets, with Germany importing 18 percent and France importing 8 percent of the world share. In France, natural vanilla comprises about 50 percent of the vanilla flavour market. Prices received in European markets tend to be higher than in USA, a reflection of more demanding quality requirements

and a greater proportion of whole bean sales. It should be noted that natural vanilla is in direct competition with synthetic vanillin, which costs one-hundredth of the price of natural vanilla.

Madagascar dominates world supply with a market share ranging from 60-75 percent over the last 15 years, which means the market is largely dependent on what is going on internally within Madagascar. A series of cyclones and a civil war in the early 2000s resulted in massive decline of supply and subsequently rapidly escalating prices. By the end of 2000, the world price for vanilla was US$200/kg (and as high as US$600/kg for grade 1 Madagascar beans). From 2002-2003, due to the exorbitantly high prices, demand fell by 35 percent. By early 2004, the market contracted due to earlier increase in prices but by then the production from increased plantings back in 2001 (in response to the high prices) entered the market, creating all time market lows (grade 1 Madagascar fell to $50/kg).

Because the last price peak was so high and relatively long it can be expected that the low will be even longer (Graph 1 below shows price swings in the market from 1970-2004). The prices are expected to fall as low as US$20/kg for the next four years before there is any sustained recovery. Another major producer is Indonesia who contributed 18 percent to the market share of vanilla in 2002, although their production has halved since then due to extreme droughts. Papua New Guinea (PNG) has emerged as a serious producer, now accounting for 11 percent of the world's vanilla supply. This is especially significant because as recently as 1998, there were no official exports of vanilla from PNG. Other significant producers are the Comoros, Uganda, India, Tonga and Mexico (McGregor, 2004).

Graph 1:[21] World vanilla prices (1970-2004)



* New York spot price (April).

Sources: USDA U.S. Spice Trade Foreign Agriculture Service (1970-88); USDA "Tropical Products: World Markets and Trade (1989-1994)"; Public Ledger (1995-2004).

[21] McGregor, A., 2004. Diversification into High-Value Export Products: Case Study of the Papua New Guinea Vanilla Industry. FAO. Rome.

There are 150 different varieties of vanilla but only two types are grown commercially: Bourbon and Tahitian vanilla. Bourbon has a narrow range of agro-ecological conditions where it can be grown but it is also more vigorous, has higher yields, a wider market and fetches a higher price on the market than Tahitian vanilla which can be grown in a wide ranger of agro-ecological conditions but is less vigorous and has lower yields as well as less market opportunities. It takes at least three years for the first vanilla bean harvest after the initial planting. Consumers can buy whole beans (as is the preferred product with much or Europe) or vanilla extract (made from the whole bean).

Organic vanilla

According to Koekoek (2005) the organic vanilla market is not very developed and is estimated to be approximately 1 percent of the global market share with approximately 10 to 20 tonnes produced annually. Supply of organic vanilla has been limited with most of it coming from Madagascar, Uganda and Comoros with India steadily increasing its interest in organic vanilla certification. On the demand side, organic regulations allow the use of 5 percent non-organic products, thus facilitating the use of conventional vanilla. This being said, there are manufacturers who aim for 100 percent organic products, thus requiring organic flavours. With the organic market continuing to grow, it is expected that demand for organic vanilla will expand. Vanilla production is often organic by default, but does not guarantee that all that all farms would qualify for certification. One possible market limitation is that consumers often perceive natural vanilla as already being natural in itself, making the added-value of organic certification less gratifying.

Vanilla prices and premiums

Natural vanilla is a luxury product with a relatively inelastic price demand meaning that consumers are largely unresponsive to price changes within a reasonable range. This being said, consumers who by in bulk (i.e. Coca Cola) are more responsive to price changes, especially if prices rise above a certain threshold. This niche market is characterized by extreme price fluctuations made up of high price peaks and prolonged depressions of relatively low prices, which tend to last longer than the peaks. Unfortunately, this incredible price volatility inhibits farmers (and nations) from actually accruing wealth from the high value of vanilla.

Prices for organic vanilla closely relate to conventional prices making them difficult to predict. When prices are stable, an organic premium can be expected and when vanilla is intercropped with other crops, such as cocoa, certification costs can be shared. According to Keokoek (2005) the premium for organic vanilla is about 20 percent, but when prices are

volatile or very high, the organic premium tends to evaporate. Garibay and Jyoti (2003) report organic vanilla premiums as high as a 53 percent in comparison to natural vanilla.

Main drivers of demand growth of vanilla

The major demand growth for natural vanilla (i.e. non organic) comes from the bulk flavouring market with a major driving force being Coca Cola. *Classic Coke* and *Vanilla Coke* both use a small amount of natural vanilla essence. Coca Cola is responsible for purchasing approximately 200 tonnes of natural vanilla annually (McGregor, 2004). Other bulk uses of vanilla are naturally flavoured ice cream, which has been a major growth area for natural vanilla in recent years and bakery products. Bulk consumers are the first to down-grade and purchase synthetic vanillin when the market is undersupplied and prices rise dramatically. Other steady drivers, although on a smaller consumer scale, are those who use whole beans for gourmet cooking and vanilla as an ingredient in perfumes.

Vanilla supply constraints and opportunities

Vanilla production is labour, capital and knowledge intensive, which means that substantial inputs are necessary to initiate correct vanilla production. In addition to this, vanilla is sensitive to pests and diseases and if an area is affected it may render cultivation impossible. The largest problem though is the notoriously volatile market which suffers from extreme highs and sustained low periods. This is largely due to inconsistent production in Madagascar, due to periodic cyclones and a civil war which disturbed production in the early 2000's. Early harvesting and theft are both common and overlapping problems when prices on the market are high. Other constraints include quality demands and lack of transparency within the market.

A major constraint for suppliers is the volatility of the market. Because of the price fluctuations, farmers often become disillusioned when prices fall dramatically from high levels, even if they remain reasonable in absolute terms. Therefore, many farmers end up leaving the vanilla sector prematurely, leading to a further waste of resources. These farmers are subsequently not in a position to return to the market when the prices recover which further contributes to undersupply and a prolonged period of high prices. Because of the inelastic nature of demand, when there is a sudden and large contraction (expansion) in world supply, the result is a disproportionately large increase (decrease) in price. This encourages a wave of vanilla planting among existing producers as well as new producers who enter the industry. High prices continue for a few years as it takes three years for new plantings to come into production. During a period of extremely high prices, quality declines because grading standards are not as strictly enforced. A further consideration during times of high prices is theft, due to vanillas high unit value and easy transportability. To counter theft, growers often harvest their beans before they are mature.

However, it is impossible to produce good quality vanilla from immature beans. This further contributes to a slackening of demand by end users who begin substituting synthetic vanillin. With a significant fall, buyers generally return to natural vanilla, but during protracted episodes of extremely high prices, there can be structural changes in demand and end-users make long-term adjustments resulting in using less natural vanilla.

These supply constraints create a paradigm where prices rise to extreme levels (i.e. 2003 prices reached US$600 per kg, up from US$50 in 1999) forcing the otherwise steady demand to contract, with end users substituting synthetic vanillin for the place of natural vanilla. This happened in 2004 with estimates stating a 45 percent reduction in demand due to the extremely high prices (Keokoek, 2005). Analysts anticipate that the market will partly recover when the prices come back to normal although this will not be easy as food manufacturers and flavour producers have switched from using natural vanilla to synthetic vanillin.

4. Virgin coconut oil

The emerging market for virgin coconut oil

Coconut palms grow abundantly in humid, tropical coastal climates and do well in sandy as well as tolerate short-term exposure to salt water. In PICs, the coconut palm is known as "the tree of life" due to its regularity of production, multiple uses, its resilience to cyclonic wind and its longevity (more than 70 years). There are over one billion coconut trees world wide, producing over 50 billion coconuts each year. Most of these trees are used for the production of conventional coconut oil which comes from copra (dried coconut flesh). The production of copra is an intensive process requiring drying, refining, bleaching, deodorizing, all requiring large-scale, high pressure, energy intensive, expensive equipment. Historically there has been a myopic focus on copra with little consideration of the multiple and varied uses of the coconut. But this has begun to shift as exporters of copra have begun to seek alternatives due to rapidly declining prices and a highly volatile market.

A viable alternative, and one gaining global recognition, is virgin coconut oil. Virgin coconut oil can be produced in multiple ways but essentially refers to the oil that is produced from the first pressing of the coconut. A popular method in the Pacific Islands is the direct micro expelling (DME) method which is a cold press process which extracts the oil from the fresh fruit. Other methods include a centrifuge process; a separation process created by letting the coconut milk sit overnight and the oil rise to the surface; and another version patented in Sri Lanka where the coconut meal is cooled so

that it hardens, the coconut oil removed and the hardened portion heated. Smaller PICs are well suited for DME virgin coconut oil production which requires more attention and processing. Larger countries such as the Philippines, Sri Lanka, and India produce huge amounts of commodity refined coconut oil. Due to the newness of virgin coconut oil, there are limited statistics available on country and world output.

Virgin coconut oil is sold in its oil form and can be used for cooking, eating or used in soap and cosmetic products. The market is growing both for food and cosmetics, especially in health food circles, though it should be noted that these consumers tend to be fickle to food fads. On the other hand, virgin coconut oil is increasingly appreciated in areas where it is produced (both in villages and urban areas) as a substitute for costly imported oils, skin and beauty products and bio-fuel. Charcoal can be produced from the coconut shell and some producers also process their coconut fibre and sell it to organic farmers for mulching and composting (ideal and necessary mulch for vanilla producers). Many virgin coconut oil producers use the residue meal after oil pressing for baking and animal feed, specifically for pigs and chickens. In addition to this, there is untapped potential to use coconut oil in place of imported fuel on some remote islands and in many cases virgin coconut oil is used as a substitute for kerosene in lamps and as a bio-fuel.

Organic virgin coconut oil

Certified organic virgin coconut oil is a niche product with a relatively high cost to volume ration and is an ideal organic product for export because it utilizes an abundant (Pacific) resource, the production process is cost effective and can be operated on a local level, the product has a long shelf-life, is low volume and potentially high value, and import regulations are not difficult to meet.

If the production of virgin coconut oil is introduced through a larger organizational structure, synergies can be achieved with regards to regular oil collection schedules, payment to producers, quality control, and credit and marketing structure. In cases where all of these resources are present, returns tend to be quite high.

The Solomon Islands represents a case where there is a successful vertically integrated system in place. Three islands have benefited from the production of virgin coconut oil providing employment and raising rural incomes, resulting in improvements of health and education. Rural communities are producing extremely high quality oil in larger volumes than can be absorbed by the domestic market. Certification has been crucial in obtaining access to the niche international markets of virgin coconut oil.

Virgin coconut oil prices and premiums

It is estimated that for each batch of about 100 coconuts, producers can receive two to three times more than what they would receive for copra (Kad and Weir, 2008), although this can vary significantly depending on the country and prices fluctuations, as well as the size and quality of the coconuts. This being said, the virgin coconut oil market has changed dramatically in recent years. In 2003, there were very few virgin coconut oil producers but today there is much more competition, particularly from the Philippines.

Therefore the world price for virgin coconut oil has been falling. This is largely due to the fact that virgin coconut oil producers in the Philippines (who are major producers of desiccated coconut and tinned coconut cream) have converted a portion of their presses to virgin presses for part of an alternative product line. Although the virgin coconut oil is only a small portion of their output (it is quite large when compared to the output from PICs) and they are able to cover all overhead with their main product lines, which in turn allows them to sell their virgin coconut oil for much less then other producers in PICs. Although this is the case with some producers in the Philippines it seems generally the exception as most larger countries (India, Sri Lanka and Philippines) produce commodity refined coconut oil compared with the smaller PICs who use a technology for virgin coconut oil production which relies on the production of small quantities at a time, meaning that larger countries ultimately have less of an advantage in the virgin coconut oil market.

Main drivers of demand growth for virgin coconut oil

The main driver behind the growth of virgin coconut oil products is a renewed understanding of the health benefits of this product. This had been inhibited for some time due to a negative and consistent position that the Australian Heart Foundation, amongst others, held that coconut oil was the single vegetable oil that should be avoided due to its high saturated fat content. This reputation has shifted as many scientists and nutritionists now understand that this particular type of saturated fat in virgin coconut oil actually helps prevent heart disease and the hardening of arteries and is identical to a special group of fats found in human breast milk. It has been clinically proven that these fats improve digestion, strengthen the immune system, and protect against bacterial, viral and fungal infections. These same fats are also used in hospital IV formulations, commercial baby formulas and sports drinks to enhance athletic performance.

In addition to this, there is growing awareness for all natural, organic, cosmetic and beauty products which use virgin coconut oil as a base. This is an additional demand growth driver for the industry. A high value market for virgin coconut oil is in cosmetics, but although prices are high, quantities needed are relatively low. For instance, a small package of scented body oil retails for about US$46 a litre, which is about five times the retail price of virgin coconut oil sold in Suva, Fiji (Kad and Weir, 2008). Virgin coconut oil is gaining recognition as an alternative to extra virgin olive oil, which is especially relevant where virgin coconut oil is being sold for significantly cheaper than imported olive oil; this is the case in Suva, Fiji.

Virgin coconut oil supply constraints

Because the harvest and production of virgin coconut oil is a labour intensive and familial activity, challenges arise when there is an inequitable sharing of benefits, regulating quality control and jealousy of those in leadership positions and also within families. It should be noted that these constraints can be overcome with organization, regular scheduled collection, payment to producers, and credit and marketing structures. Additional problems can arise on larger plantations where transportation is not available to move large quantities of coconuts back and forth for the husking, grating and pressing process. The ideal situation for producing virgin coconut oil is a small family farm.

Additional supply constraints arise from the fact that the production of virgin coconut oil is quite time consuming and requires collection and sale of nuts (ideally) by the whole family system. Men, women and children husk, grate and weigh the coconut meal which is then dried and pressed to produce oil. Labour can be a limiting factor if substantial amounts of a family have moved away to find work in urban areas.

5. Pepper

From 2000 to 2004, the value of conventional spice imports increased, on average, by 1.9 percent per year, while the volume increased by 5.9 percent. In 2004, world trade in spices consisted of 1 547 million tonnes valued at US$2.97 billion. From 2000-2002, world import volumes of spices grew at an annual average rate of 7 percent, whereas import values decreased on average by 5 percent annually. This negative growth in value terms is attributed to dramatic decreases in the value for whole pepper during 2000-2001 by about 40 percent and a further 18 percent in 2002/03. While import volumes stabilized from 2003/04, that of values grew by 4.6 percent. This upward value trend is mainly attributed to higher market prices for major commodities such as capsicum, vanilla, ginger, bay leaves and spice mixtures. There is a general growing trend towards the trade of processed spices, which receive higher prices.

The major markets in the global spice trade are the USA, the European Union, Japan, Singapore, Saudi Arabia and Malaysia. The principal supplying countries are China, India, Madagascar, Indonesia, Vietnam, Brazil, Spain, Guatemala and Sri Lanka (Zijlstra-Adriano, 2006).

Black pepper (*Piper nigrum*) is native to Southeast Asia and can be purchased today largely preserved in three different ways: black pepper which comes the still green unripe berries of the pepper plant; white pepper which is obtained through fermentation and is simply the seed of the pepper plant with the skin of the fruit removed obtained by fermenting the ripening fruit; and green pepper which is made from unripe berries but treated in a way that retains the green colour (a similar preservation can be done to create red coloured peppercorns also). It should be noted that with water-weight lost in the drying process, 50 kg of fruit produce 16 kg of black pepper and 6 kg of white pepper.

Peppercorns are, by monetary value, the most widely traded spice in the world, accounting for 20 percent of all spice imports in 2002 but as mentioned the price of pepper can be volatile and fluctuates from year to year. Whole grain non-ground black pepper accounts for 90 percent of traded pepper in the international market (Anon. 2001a). According to Zijlstra-Adriano (2006) 260 000 tonnes of pepper are imported yearly into the global market. While growth in volume traded rose marginally, import values for whole pepper declined steeply by 54 percent in the years 2000-2004 resulting in lower world pepper prices, interestingly, unit prices for crushed pepper remained stable.

The USA imports 24 percent of all world pepper imports valued at US$114 million and 66 000 tonnes. The European market imports 80 000 tonnes per year valued at US$180 million. Other top consumers are Japan and Singapore. Green and white pepper has its largest market in Western European markets (Zijlstra-Adriano, 2006). As of 2008, Vietnam was the world's largest producer and exporter of pepper, producing 34 percent of the worlds pepper crop in 2008. Other major producers include Indonesia (9%), India (19%), Brazil (13%), Malaysia (8%), Sri Lanka (6%), Thailand (4%), and China (6%). Global pepper production peaked in 2003 with over 3 550 000 tonnes but has fallen to just over 2 710 000 tonnes in 2008 due to a series of issues including poor crop management, disease and weather (Anon., 2008b).

Global organic and fair trade market

The market structure of organic (and conventional) spices tends to be in three areas: retail, catering/food service, and food manufacturing with this final category accounting for 50-60 percent of trade in organic (and conventional) markets in the European Union.

For spices and related products (herbs, condiments, sauces), organic certification serves as added value to a brand's quality image, as opposed to the main reason for a purchasing

decision. Dried organic spices in bulk are used as ingredients in a wide range of products; only a few conventional spices can still be used in organic food and beverages. This is the market with the greatest opportunity for developing country suppliers. Options for adding additional value in producer countries should be explored but in the case of pepper, is generally limited to grinding - as long as buyers are confident that product quality and integrity is properly monitored.

Demand for organic spices varies considerably from country to country, moreover the type of spice desired varies considerably. Presently, USA, UK, France, the Netherlands and Germany have the greatest demand for organic spices, with Germany having the largest organic spice market in Europe. Australia, New Zealand Canada, Japan and additional countries within Europe (i.e. Spain) have slowly expanding markets for organic spices with ample market opportunities, largely due to growing safety concerns and awareness towards organic products in general. According to the United Nations' International Trade Centre (ITC), organic spices make up less than 1 percent of this product's market. Often, market opportunities for organic spices are lower than their conventional counterparts because the two production types are quite similar (low input requirements, no major pest and disease constraint, comparative yields).

The success of the fair trade initiatives for several commodities indicates that marketing opportunities for fair trade branded retail packed spice and herb crops may also exist. However, not all products are equally well suited for fair trade branding: it is more likely to make sense for packaged (consumer packs) food products than for commodities used as food ingredients.

Organic spices price premium

According to Garibay and Jyoti (2003), the price premium for organic spices can be as much as 30 percent higher than the conventional price. But generally, the information on organic prices is difficult to obtain from published sources, and in an evolving market like organics, prices move rapidly to reflect the changing balance between supply and demand. For the organic spices, supply and demand has been roughly in balance and buyers report that they have a good set of purchasing choices. Over the medium-term, there are opportunities for achieving premium prices as markets for organic spices evolve. Over the longer term though, since organic spices can often be produced as cheaply as conventional versions, organic prices may be expected to settle closer to the level of conventional spices.

Main drivers of demand growth for organic pepper

The conventional black pepper market growth rate of 2.5 percent per year is partly due to the popularity of international cuisines (especially Indian, Thai and Chinese). In addition, highly processed and industrial food chains utilize more black pepper. Approximately 60 percent of all world pepper production is consumed in industrial food chains (Anon. 2001a). Taking the

above into account, as well as the steadily growing awareness towards organic foods, it can be expected that the organic pepper market will continue to grow. In addition to this, the organic ingredients market tends to be overlooked as a possibly entry point for organic suppliers, the advantage of which is that the supplier does not have to maintain the expense of identity preservation.

Pepper supply constraints

Pepper prices tend to move cyclically, and fluctuations vary from one year to another. In the past, price volatility was caused by supply fluctuations in producing countries and was further increased by speculation in the market.

A major constraint in trading pepper (organic and conventional) is mycotoxin contamination. Pepper is regularly spot tested for aflatoxin at the port of entry, and often found to be over the permitted maximum. Once the crop is contaminated there is little that can be done to remove mycotoxins organically. Ammonia treatment is used to reduce aflatoxin in some conventionally grown crops, but chemical substances cannot be used under organic rules.

Another constraint at the point of sale is that most supermarket chains are reluctant to stock a complete range of organic spices as they already carry leading the market brands. If shelf space is given to organic spices in the major chains, generally the top selling half dozen lines are sold because of the relatively low sales value to space ratio for spices. Natural food stores are more likely to stock a complete range of organic spices, and individual outlets are mainly supplied by whole food/organics wholesalers.

IV. MARKET ASSESSMENT FOR SELECTED ORGANIC SUPPLY CHAINS

Currently in the PICs coffee, cocoa, vanilla, virgin coconut oil and pepper is being produced and in some cases organically. Table 4 demonstrates the extent of conventional and organic production of the five crops (coffee, cocoa, vanilla, virgin coconut oil and pepper) being undertaken in the nine PICs examined in this report. Of the five organic commodities the Cook Islands, Kiribati, and Tonga are currently producing none organically while Niue is producing organic vanilla and the Solomon Islands is producing virgin coconut oil. Fiji is producing vanilla, virgin coconut oil and pepper while Papua New Guinea is producing coffee, cocoa and pepper organically. Vanuatu is producing everything but coffee while Samoa currently produces all five commodities organically.

Table 4: Conventional production of coffee, cocoa, vanilla, coconuts and pepper (in 2007)[22]

Country	Coffee (green) (tonnes		Cocoa (tonnes)		Vanilla (tonnes)		Coconuts (tonnes)		Pepper (*Piper* sp.) (tonnes)	
Cook Islands	0		0		0		2 000 F		0	
Fiji	15 F		12 F		0	X	140 000 F	X	160 F	X
Kiribati	0		0		0		110 000 F		0	
Niue	0		0		0	X	2 600 F	X	0	
Papua New Guinea	75 400 F	X	50 300 *	X	200 [23]		677 000 F		0	X
Samoa	8 F	X	530 F	X	0	X	146 000 F	X	7 F	X
Solomon Islands	0		5 300 F		0		276 000 *	X	0	
Tonga	18 F		0		150 F		58 500 F	X	0	
Vanuatu	15 F		1 400 F	X	0	X	322 000 F	X	0	X

F=FAO estimate, *=Unofficial figure

X: indicates where organic product of specific crop has been reported to be currently produced

Organic coffee and PICs

Current production of certified organic coffee in PICs is largely being undertaken by Papua New Guinea where there area approximately eight companies exporting organically grown coffee certified by NASAA, ACO and Ceres. One of these companies, Monpi Coffee Exports which is certified by a Ceres (an environmental certification) is also CAFÉ Practice (Starbucks), UTZ and Fair-trade certified. The first efforts to produce organic coffee for export was in the early 1990's and most coffee is cultivated using natural production methods (e.g. inter-

[22] FAOSTAT 2007, unless otherwise indicated

[23] This figure comes from 2003 and was found in: McGregor, A., 2004. Diversification into High-Value Export Products: Case Study of the Papua New Guinea Vanilla Industry. FAO. Rome

cropped in primary forest together with other crops). Organically certified coffee is also being cultivated in Samoa. In addition to this, the Commodities Export Marketing Authority (CEMA) of the Solomon Islands is considering pursuing organic certification of coffee.

Through certification and differentiation, producers of coffee can become competitive in the market and it is expected that those with double certification, such as organic and fair-trade are likely to have a secure place in the market as this product is widely accepted. This being said it should be noted that certified markets are still relatively thin in terms of the number of buyers and therefore market volatility should be considered (Giovannucci, Lui and Byers, 2008). This does not generally correspond well with the one to three year investment that farmers must wait to go through the certification process.

Although various certifications are conducive to rural smallholders' entry into global markets while safeguarding their natural resources, certification alone does not guarantee a place in the market for small holders. Caution should be heeded as this segment of the market is becoming increasingly saturated with certified producers. In addition to this the general quality of certified coffee is increasingly being jeopardized as several certification schemes with less demanding standards are being offered to larger producers who sell large volumes, offered at lower costs. Ultimately, for PICs to be competitive in this market basic certification will not be enough and the creation of a hyper-niche market will ensure ongoing opportunities. Therefore focus must also be placed on quality, consistency, access to viable markets, marketing relationships and consumer education about the uniqueness and particular traits of PICs coffee.

Organic cocoa and PICs

Certified organic cocoa in PICs is currently being produced in Vanuatu, Samoa and Papua New Guinea. Vanuatu sells certified organic cocoa through the Vanuatu Organic Cocoa Growers Association. There are 3 000 producers in the cooperative and they exported 313 tonnes of cocoa to their sole buyer in France in 2007. Samoa currently produces organic cocoa and is working with Oxfam New Zealand to receive fair-trade certification.

Currently all PICs have MFN status. The office of the U.S. Trade Representative recommends that PICs make greater use of the trade preferences and consider using a regional association of Pacific Island economies so as to pull inputs for the Generalized System of Preferences (GSP).[24] Canada grants duty-free entry to cocoa beans and applies low tariffs on processed cocoa products (with a few exceptions).

The cocoa market is currently characterized by undersupply leaving space for growth and market opportunities. Although less then 1 percent of the North American cocoa market is currently organic, with the sharp rise in demand, producers and suppliers are scrambling to fill the gap. This being said, there is evidence that cocoa production is increasing rapidly.

[24]According to US Trade website, approximately $2.2. million in US imports from PICs were eligible for duty free entry but were not claimed.

Because it has been forecast that the certified market is likely to grow by at least 20 percent per year during the next decade, producers such as Daabon based in Columbia (one of the largest organic cocoa producers in Latin America) plans on tripling its production before 2010. Quick reactions, that take some time to harvest the outcome, could result in oversupply if not monitored carefully. Similar to the coffee market, for PICs to be competitive cocoa producers, certification alone will not be sufficient. Therefore focus should be placed on quality, consistency, access to viable markets, marketing relationships and consumer education about the uniqueness and particular traits of PIC cocoa.

Organic vanilla and PICs

Within the PICs there organic vanilla is currently being grown in Fiji, Niue, Samoa and Vanuatu although exports only originate from Fiji and Vanuatu and efforts are being made to expand organic vanilla production in Vanuatu onto the island of Tanna. This is largely due to climate change-induced rainfall which adversely affected the flowering of vanilla on the island of Santo. While vanilla has been farmed on Niue for a number of years sales have been conducted locally between farmers and a few local business people who then sold the beans in New Zealand.

There have been some issues regarding the quality of harvested beans and with support from the SPC an expert from Tahiti has been hired to assist farmers with their harvest in 2009. In Samoa vanilla is a new crop and the first flowering occurred in 2008, with the first harvest expected in 2009, although production levels are expected to be small. Currently Women in Business Development Inc. (WIBDI) in Samoa wishes to pursue fair-trade certification of vanilla through a partnership with Oxfam New Zealand and the Tindall Foundation. Tonga had certified organic vanilla in 1996/97 but was not able to continue certification due to lack of funds. Now, with money from the Stabex Fund, to be administered by the Tongan Ministry of Agriculture, Food, Forestry and Fisheries, there is a plan to re-establish organic vanilla certification through a US $2.5 million project, as well as to intensify production of vanilla and kava. In addition to this WIBDI has assisted with mapping farms in Tonga in preparation for certification by NASAA.

Vanilla production is labour intensive and well suited for smallholder households; it typically does not do well mass produced in plantation settings, due to a combination of labour requirements and security reasons. In the case of PICs or other highly rural, smallholder based agriculture, this aspect of vanilla cultivation is not a constraint and is instead a positive attribute of this crop, since most farming is still being done by small-scale farmers.

The extreme price instability associated with high-value niche commodities does not in itself create high vulnerability for farming households. High risk and vulnerability occur when all household resources are devoted to just one commodity. This being said entering the vanilla market does not inherently guarantee vulnerability. If farmers are able to integrate vanilla into existing farming systems the price and production risks can be greatly reduced as well as providing both cash and food for the family. In addition to this vanilla requires little to no

imported inputs or regular ploughing, therefore there is little soil disturbance. Vanilla provides a perfect niche product that can be grown in conjunction with other cash crops (cocoa) as well as integrated into existing farm systems.

Virgin coconut oil and PICs

Virgin coconut oil is being produced in Fiji, Niue, Samoa, Solomon Islands, Tongaand Vanuatu. Samoa is the main producer of virgin coconut oil in PICs, largely due to the role and organization of Women in Business Development Inc. (WIBDI) who created the Virgin Oil Coconut Project which now involves more than 200 organically certified farmers and their families and has secured an export contract with The Body Shop (a major cosmetic company), for up to 30 tonnes a year. Fiji has been particularly successful with its virgin coconut oil production, partly due to its relatively large tourism industry, many of which purchase cosmetic products and high-grade soap while in Fiji.

The Solomon Islands and Vanuatu are currently processing and exporting virgin coconut oil also. In addition to this, the Commodities Export Marketing Authority (CEMA) of the Solomon Islands is considering further certification for virgin coconut oil, amongst other products.

According to Etherington (2006) in "Bringing hope to remote island communities with virgin coconut oil production", direct micro expelling (DME) units for high quality virgin coconut oil extraction have been set up across the South Pacific including Kiribati, PNG, Solomon Islands, Vanuatu, Fiji, Samoa and Tonga. Many of these units are isolated and cater to local demand. Some are directly linked with boarding schools where the oil is used for cooking, making soap and as a fuel for diesel generators.

Virgin coconut oil could provide an opportunity for revival of coconut industries in the Pacific Region. This is especially the case if the PICs work together to supply the global markets with this steadily growing niche product which is experiencing new market opportunities due to increased health awareness and recent studies debunking past negative myths. In addition to the market growth of edible virgin coconut oil, there is expanding opportunities within the cosmetic and beauty sector as more people seek all-natural products. Regardless, the size of the market should not be overestimated and is currently small, with limited opportunities for entry on an international level. This being said there are local inter-island market opportunities for virgin coconut oil as a food and fuel source.

Organic pepper and PICs

In the Pacific Region current organic pepper production is undertaken in Fiji, Papua New Guinea and Vanuatu, with possibility for organic certification of pepper (amongst other products) in the Solomon Islands through the Commodities Export Marketing Authority (CEMA). In Fiji, *Spices of Fiji* is a well established and organically certified company which has successfully developed a pre-packaged line of retail spices, including pepper, and markets a variety of spices as a hedge against price variation. *Spices of Fiji* sells domestically in Fiji in selected supermarkets but 95 percent of their sales are through the export market.

Although they are currently certified by ECOCERT (and previously BioGro) over half of their exports go to importers who do not care that they are certified organic (Tofinga, 2006).
In addition to producing spices, agro-tourism is proving to be very promising. An innovative effort undertaken by *Spices of Fiji* has been to use agro-tourism as a marketing tool. Many tourists visit Fiji and have never seen how pepper or vanilla vines (and cinnamon/nutmeg trees) grow and are curious to see, smell and touch while simultaneously understanding the history and local culture.

For the Pacific Region products such as pepper provide a natural and fairly stable market because there is an opportunity to add-value to packaged and processed products rather than selling raw bulk commodities with minimal returns. Much like the vanilla market the black pepper market is characterized by inelastic demand, in that there are no substitutes for pepper, this inelastic demand is complimented by market volatility depending on the supply and demand balance, producers should be aware of this.

Taking the above into account the organic black pepper market, although not infinite, provides a fairly consistent entry point into the steadily growing organic market. This is especially the case in considering the “ingredient market” which tends to be overlooked as an entry point. The advantage of supplying the organic ingredients market is that the supplier does not have to maintain the expense of identity preservation. Regardless, care should be taken and while there are promising opportunities for producers of organic spices, specifically pepper, markets are often niche rather than broad-based and therefore, can be flooded by producers from newly certified large plantations, changing the balance of supply and demand quickly and dramatically. It is therefore important that producers keep themselves well informed and aware of market developments and realities.

V. CONCLUSIONS

Today many farmers in the Pacific Islands are farming organically simply by virtue of utilizing their traditional knowledge and techniques and because purchasing inputs is highly costly. Most of these farmers have not received organic certification for multiple reasons - ranging from the distance to transport goods, certification costs and a generally questioning by farmers as to why they should receive certification for a practice that has been ongoing for generations (Tofinga, 2006). Despite these hesitations and concerns, it is important to recognize the potential opportunities that organic certification could provide on markets.

The costs of certification for the Pacific Region are relatively high, due to travelling costs and small-scale of existing and scattered organic farms. For organic certification to be viable in PICs, emphasis should be placed on organization and inter-island collaborative processes that work toward internal control systems, where inspection is delegated to local communities, while certification is undertaken by internationally accredited certifiers. Cost-efficiency will depend on organization of producers and achieving a critical mass among operators. This is being successfully achieved by Women in Business Development Incorporated in Samoa.

Besides certification, the critical nature of strong market research and relationships cannot be emphasized enough for PICs. Knowing and understanding the state of markets will be key to the success and ability to access international trade. This paper provides a basic overview but further research of specific supply chains will be crucial. All market options, especially when referring to the five organic commodities addressed in this paper (coffee, cocoa, vanilla, virgin coconut oil and pepper) provide opportunity as well as reason for caution. Generally, collaborative sharing of market intelligence and information is a pre-condition for success. As mentioned earlier, it should be kept in mind that the extreme price instability associated with high-value niche commodities does not in itself create vulnerability. Moreover, as high risk occurs when resources are devoted to the production of just one commodity, farmers would be better off if they integrated organic cash crops into their existing farming systems.

PICs could also consider using marketing techniques focused on their “clean, green and pristine” image (much like *FIJI Natural Artesian Water* has done). This is even more viable with organic products as they are already being marketed to an “aware” audience. Therefore, by promoting PICs “pure” state serves as additional incentive along with organic and fair trade certification.

Constraints in building the organic sector remain numerous, ranging from the small size of the organic sector to the lack of regular and reliable supplies. There are generally limited (if not, inexistent) resources devoted to extension, education and more generally, promoting organic projects. But there is a critical mass of people, both within institutions and those cultivating Nature that increasingly believes that organic agriculture holds great opportunities for PICs.

With the Pacific Organic Standard in place, the Regional Organic Task Force, the Pacific High Level Organics Group and the Secretariat of the Pacific Community working together with both the local and international community, there is no reason that the sourcing of affordable certification, organization of producers and informed marketing research and relations cannot be created.

Bibliographical references

Anon. 2000. Report on Organic Farming in Samoa. FAO Sub-Regional Office for the Pacific Islands (mimeo)

Anon. 2001a. Product Profile: Pepper. CORPEI-CBI Project. http://www.sica.gov.ec/agronegocios/productos%20para%20invertir/CORPEI/pimienta.pdf

Anon. 2001b. World markets for organic fruit and vegetables (FAO, CTA, International Trade Centre)http://www.fao.org/documents/show_cdr.asp?url_file=/DOCREP/004/Y1669E/Y1669E00.HTM

Anon. 2004. Developing a Strategic Plan for the Organic Farming Industry in Samoa. Ministry of Agriculture ISP, Samoa.

Anon. 2004. Marketing manual and web directory for organic spices, herbs and essential oils. International Trade Centre. UNCTAD/WTO. http://www.intracen.org/mds/spices_manual.pdf

Anon. 2007. Office of the U.S. Trade Representative: Use of the U.S. Trade Preferences by Pacific Island Economies. http://www.ustr.gov/assets/Trade_Development/Preference_Programs/GSP/GSP_in_Use_Country_Specific_Information/Pacific_Isls_(Cook_Isls,_Federated_States_of_Micronesia,_Kiribati,_Nauru,_Niue,_the_Republic_of_the_Marshall_Isls,_Samo/asset_upload_file288_14834.pdf

Anon. 2008a. Case Study: Virgin Coconut Oil in Samoa. FAO. Rome

Anon. 2008b. Seasonal Outlook Report: Pepper. Karvy Comtrade Limited. http://www.karvycomtrade.com/downloads/karvySpecialReports/karvysSpecialReports_20080515_01.pdf.

Asian Development Bank website. 2005. ADB Loan Signed to Help Develop Alternative Livelihoods for Fiji's Farmers. Suva, Fiji Islands. http://www.adb.org/Documents/News/SPSO/spso-2005002.asp

Currency Converter http://www.oanda.com/convert/classic

Etherington, D. 2006. Bringing hope to remote island communities with virgin coconut oil production. *In* Adkins, .S.W., Foale, M. and Samosir, Y.M.S. (eds). Coconut revival—new possibilities for the 'tree of life'. Proceedings of the International Coconut Forum held in Cairns. Australia, 22-24 November 2005. ACIAR Proceedings No. 125.

FAO Statistics. 2008. FAOSTAT. http://www.fao.org/corp/statistics/en/

Foimati, A. 1996. Paper presented at Papua New Guinea Mini-Conference on National Youth Service - Youth in National Development. http://www.pngbuai.com/300socialsciences/youth/youthconf-papers10.html

Garibay, S. & Jyoti, K. 2003. Market opportunities and challenges for Indian organic producers. Research Institute of Organic Agriculture and AC Nielsen ORG-MARG. http://orgprints.org/2684/01/garibay-2003-Market-Study-India.pdf

George, C.K. Undated. Organic Spices. Peermade Development Society, Kerala. ftp://166.111.30.161/incoming/new_book/Food%20Science/Handbook%20of%20Herbs%20and%20Spices/35628_04.pdf

Giovannucci, D., Liu, P. and Byers, A., 2008. Adding Value: Certified Coffee Trade in North America. In Pascal Liu (Ed.) Value-adding Standards in the North American Food Market-Trade Opportunities in Certified Products for Developing Countries. FAO. Rome.

Kad, S. and Weir, T. 2008 "Virgin coconut oil as a tool for sustainable development in outer islands", *Pacific Economic Bulletin*, 23(3): 50-62.

Koekoek, F.J. 2005. The natural vanilla markets; with special attention for the organic segment. http://www.grolink.se/epopa/Publications/Market-studies/VanillaMSsummary.pdf

Kokonut Pacific http://www.kokonutpacific.com.au/index.html?production/copra.html

Luzius, M. 2006. Agricultural firm export strategies in Fiji. Pacific Economic Bulletin, 21:2, 162-168.

Maharaj, J. 1999. Parliament of Fiji: Library, Research, Information & Advisory Service Fact Sheet Youth Employment Issues; Vol. 3 No. 1. http://www.parliament.gov.fj/publications/viewResearch.aspx?research=19

Mapusua, K. 2009. Organic agriculture in the Pacific Region. Willer, Helga & Kilcher (Eds.) in *The World of Organic Agriculture: Statistics and Emerging Trends.* FIBL-IFOAM Report.

Mapusua, K., and Maccari, M. 2007. An Overview of Organic Agriculture in the Pacific, IFOAM.

McGregor, A., 2004. Diversification into High-Value Export Products: Case Study of the Papua New Guinea Vanilla Industry. FAO. Rome.

Organization for Industrial, Spiritual and Cultural Advancement (OISCA) http://www.oisca.org/e/project/png/index.htm

Secretariat of the Pacific Community. 2008. Pacific Organic Standard.

Tofinga, M. (Ed.) 2006. IRETA/CTA Regional Workshop on Organic Certification and Marketing in the Pacific. Apia, Samoa.

Vinning, G. 2008. Marketing organics in the Pacific Islands. Suva, Fiji.

The World Cocoa Foundation http://www.worldcocoafoundation.org/for-the-media/fast-facts.asp

Women in Business Development Incorporated (WIBDI). http://www.intracen.org/bsrt/casestudies/cssamoawibf.pdf

Zijlstra-Adriano, C. 2006. World Markets in the Spice Trade 2000-2004. International Trade Centre. UNCTAD/WTO. http://www.intracen.org/mds/spices_report_web.pdf