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Agriculture for Growth: learning from experience in the Pacific

Summary results of five country studies in Fiji, Samoa, Solomon Islands, Tonga and Vanuatu



All  Agricultural Commodities Programme



Agriculture in the Pacific is more than the occupation of the great majority of people; it is their satisfaction, the means by which what survives of tradition is largely expressed and maintained, and the channel of individual creativity and enterprise within traditionally close confines of the extended family and community.

Barry Weightman, 1989

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PREFACE

The World Bank's *World Development Report 2008* highlighted "agriculture for development" and gave advice and recommendations for designing and implementing agriculture-for-development agendas. This report was set in the global context with particular emphasis on Africa and Asia. The Pacific 2020 project undertaken in 2005 identified challenges and opportunities for agriculture as a key driver for growth in the Pacific context. The 2020 background study for agriculture identified policy options and made specific policy recommendations, but these were made at a time of rising world commodity and fuel prices and a generally positive global economic growth scenario.

The recent decline in global economic growth prospects coupled with continued volatility of commodity and fuel prices increases the environment of uncertainty for agriculture business development. But set against a backdrop of constraints and uncertainty there are a number of emerging success stories in the region which could provide valuable lessons and help refine realistic policy options for the Pacific Island countries.

This study has adopted an empirical approach using case study research to gather evidence to better inform policy processes in the Pacific region. It aims to distill the lessons from experience, looking for critical factors of success and any context specific issues which may influence the way that different communities may respond in different parts of the region. The studies implemented in five Pacific island countries in 2009 and an interactive expert working group meeting held to discuss the study findings, has been the basis for the comparative analysis and synthesis which is presented in this report.

It is hoped that the lessons learned from the study should increase understanding of policy and institutional support needed for market led smallholder agriculture to contribute to broad based growth in the Pacific region.

The report should be of particular interest to those responsible for developing agriculture policy and for financial institutions and development partners seeking to target investments to promote smallholder agriculture development in the region.

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The synthesis report was prepared by Tuifa'asisina Steve Rogers (Consultant, FAO Sub-regional Office for the Pacific) and Jamie Morrison (Trade and Market Division, FAO), with assistance from Heiko Bammann (Rural Infrastructure and Agro-Industries Division, FAO).

Financial support for the participation of national government staff and local consultants in undertaking the studies and participating in the working group meeting was provided from the EU funded All ACP Agricultural Commodities Programme. The study process, which included data collection, analysis and report preparation, together with participation in the regional interactive workshop provided a valuable opportunity for building the capacity of government staff and consultants involved in policy related work. Valuable contributions on the subject were also obtained at an Expert Working Meeting held in Apia in November 2009.

The services of the lead international consultant and case study author of the Vanuatu and Fiji case studies were secured through financial support from the Rural Infrastructure and Agro-Industries Division (AGS). The contribution also covered expenses related to his participation and the participation of the lead author of the Solomon Islands case study at the final regional expert meeting.

The designations employed and the presentation of material in this paper do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.



INTRODUCTION

The official policy statements of many national governments in the Pacific accord a central role to the intensification and commercialisation of smallholder agriculture as a means of stimulating the rural economy and alleviating poverty. Axiomatic to this stance is the belief that smallholder agriculture is uniquely positioned to deliver broad-based growth in rural areas. But the countries in the region face some immovable constraints to developing agricultural market driven economies, including their smallness (lack of economies of scale), geography (fragmentation and distance from major markets), and vulnerability to natural disasters.

Several studies (e.g. McGregor, 2006; Browne and Orsmond, 2006 and Duncan, 2007) have also identified other key constraints to agricultural development in the Pacific which *inter alia* include: poor infrastructure, weak human resource capacity, lack of affordable finance (credit), land issues, policy, regulatory and governance issues, market access issues, inadequate research and advisory services and overall a generally difficult and risky environment for commercialisation of agriculture and business development.

On the positive side, there are examples of the private sector increasingly providing opportunities for value addition relative to primary production. In some countries agro-processing enterprises are emerging which are stimulating demand for new value added products and thereby increasing the effective size of market for farmers' products.

However, the processes by which development of agribusiness takes place and the contribution of these developments to the commercialisation of the smallholder agriculture sector remain context-specific. They depend on the product sector, market needs, the stage of development of a particular country and area, agriculture sector policies, institutions and services and the actions taken, or not taken, by governments to promote agro-industries and agricultural value chains (FAO, 2007)

If agricultural commercialisation inclusive of smallholder farmers is to be a key driver of broad-based growth in the region then the critical conditions that need to be in place require further elaboration. While recognising that the relative importance of strategies and interventions are country specific, it is considered that there are lessons based on experiences of successful enterprise development in countries of the region that can generally help refine realistic policy options and interventions for Pacific island countries. With this view in mind, five case studies have been undertaken on successful agricultural enterprises in Fiji, Samoa, Solomon Islands, Tonga and Vanuatu.

The overall aims of the study are to:

- Gain a deeper understanding of smallholder commercialisation and its strengths and weaknesses in contributing to broad-based growth.
- Strengthen understanding of the context in which policy choices have to be made.
- Help identify innovative ways to link public funding with private sector resources.
- Provide specific advice to governments on the most appropriate interventions they could make and equip decision makers with knowledge to make wise choices about where, when and how to invest.

In an attempt to meet these aims, this synthesis investigates why things might be working in spite of perceived constraints. What factors influenced the success of these enterprises? How did they deal with perceived constraints? Why did they succeed where others have failed? Can successes be scaled-up and replicated? Where can effort and public money best be focused? These were some of the questions that the case studies set out to answer.

Developing policies and institutions to encourage agribusiness investment needs to be done in a large policy context. Many of the most critical aspects of a supportive agribusiness environment are identical to those which apply to manufacturing and services industries. These include good public governance, stable macroeconomic climate, enforceable commercial laws, appropriate financial services, protection of property rights, and adequate infrastructure. Supporting trade policies are particularly important especially in the light of PACER plus, EPA and WTO discussions (FAO, 2007).

The above elements notwithstanding, there are aspects of enabling environments that are distinct or particularly important for agribusiness and agro-industries, not least because of the particular role that the sector plays in processes of economic transformation, in securing food security and livelihoods opportunities, and because of the widespread nature of failures of the market to deliver the types of goods and services that underpin commercialisation, particularly to more remote and resource constrained farmers.

These case studies and country experiences have gone some way to elaborate some of these aspects and point to several key lessons on strategies and interventions to promote agricultural development which is inclusive of smallholder farmers in the Pacific region.

Following this introduction, the report first provides an overview of the relative importance of the agriculture sector across the case study countries in terms of its contribution to economic activity and to employment opportunities, highlighting the particular roles of the product sectors selected for case study research. It then discusses the case study findings, in terms of success factors, constraints to sector development, and potential for scale up and replication. In the concluding

section, these findings are drawn upon in attempting to address the overall study aims.

OVERVIEW OF THE ECONOMY AND AGRICULTURE SECTOR IN THE FIVE CASE STUDY COUNTRIES

The five countries where the case studies were carried out are all small island developing states (SIDS). Some basic socioeconomic statistics are shown in Table 1. Samoa, Solomon Islands and Vanuatu are listed by the UN as Least Developed Countries (LDC), however, Samoa is currently scheduled to graduate this status in December 2010.

Table 1: Socioeconomic Statistics for the Case Study Countries

Country	Mid-year population estimate (2008)	Population growth rate (%)	Land area Km ²	Population density	Rural population (%)	Gross National Income per person USD (2007)
Fiji	839,324	0.6	18,271	46	49	3,750
Samoa	182,724	0.4	2,935	62	79	2,700
Solomon Islands	521,120	2.8	28,370	18	84	750
Tonga	102,724	0.4	650	158	77	2,480
Vanuatu	233,026	2.6	12,190	19	79	1,840

Source: SPC (2009), ADB (2009)

All of the countries, with the exception of Fiji, have more than 75% of the population living in rural areas that are heavily dependent on subsistence and semi-commercial agriculture for their livelihoods. But over recent years urbanisation has been increasing in all the countries due to migration from rural areas.

Despite the geographical isolation of these Pacific island countries, there is increasing interdependence between national economic processes and the global economy. The island's small open economies are extremely vulnerable to domestic and external shocks. Global recession impacts the countries through declining demand and lower prices for their commodity exports, pressure on tourism and falls in remittance flows from expatriate workers in New Zealand, Australia and the USA.

The real Gross Domestic Product (GDP) growth performance has varied widely across the countries over the last five years (Table: 2). Solomon Islands and Vanuatu have shown strong growth whereas Tonga and Fiji's growth has been sluggish averaging less than one percent growth per annum. However growth in

the Solomon Islands is fuelled largely by unsustainable logging. Samoa's economy which experienced good growth performance in the early part of the decade has now faltered and registered a 3.4% decline in 2008. A feature in all the countries is that much economic activity is focused in urban centres and the benefits of growth are not being equally shared in rural areas.

Table 2: Real Gross Domestic Product growth per annum (%)

Country	2004	2005	2006	2007	2008	Average
Fiji	5.2	0.6	3.4	-6.6	0.2	0.56
Samoa	4.8	5.4	1	6.4	-3.4	2.84
Solomon Islands	8	5	6.1	10.7	6.7	7.3
Tonga	2.6	-3	3	0.2	0.7	0.7
Vanuatu	5.5	6.5	7.4	6.8	6.3	6.5

Source: ADB (2009)

Inflation has generally been higher in Solomon Islands and Tonga, primarily reflecting weaker fiscal performance. Inflation peaked in the countries in 2008 driven by high international oil and food prices (Table: 3).

Table 3: Inflation Annual Percentage Change in CPI

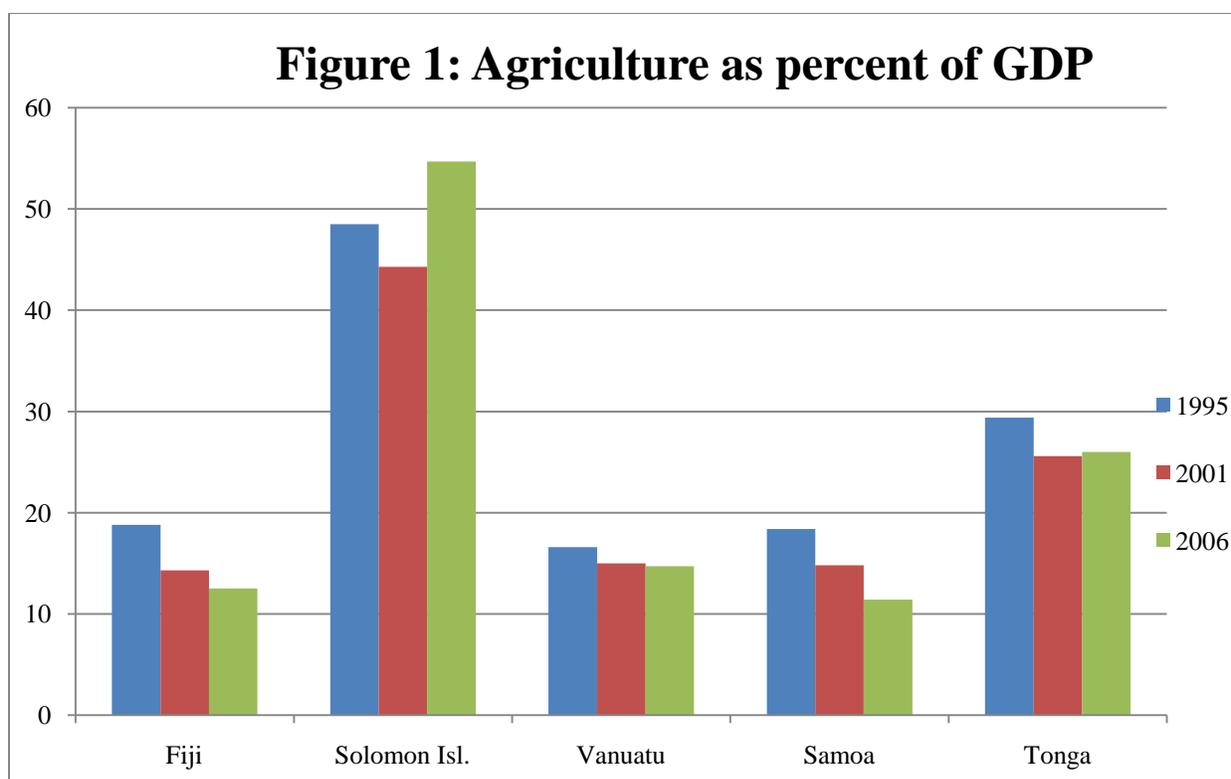
Country	2003	2004	2005	2006	2007	2008	Average
Fiji	4.2	2.8	NA	2.5	4.8	7.8	4.4
Samoa	0.1	16.3	1.9	3.8	5.5	11.5	6.5
Solomon Islands	10	7.1	7.2	11.2	7.7	17.3	10.1
Tonga	6.8	11.8	9.9	7.3	5.1	9.6	8.4
Vanuatu	1.1	3.2	1.2	2.1	4	4.7	2.7

Source: ADB (2009)

The spike in food and fuel prices and the global recession have made it abundantly clear that the Pacific island countries need to strengthen and strategically diversify their economies to build resilience to economic shocks (AusAID, 2009).

Agriculture¹ and tourism are important to the economies of the five countries to varying degrees (Figure: 1& Table: 4). However, the contribution of subsistence agriculture is often underestimated in national statistics and the sector is fundamental for all of the countries in providing livelihood options and agriculture products still form the main component of exports. Furthermore, the sector continues to employ the greatest percentage of the labour force, either in commercial efforts, or more commonly, in self-sufficiency endeavours. But the countries remote locations, poor access to commercial and capital markets, poorly developed infrastructure and limited institutional capacity hinders economic development in the sector.

¹ Agriculture here includes crops, livestock, forestry and fisheries.



Source: ADB (2009)

Table 5: Structure of the economy in the five countries in 2007

Country	Agriculture Percent share	Services Percent share	Industry Percent share
Fiji	13.1	65.8	21.1
Samoa	10.9	58.1	31.1
Solomon Islands	55.6	36.7	7.7
Tonga	25.8	60.3	13.9
Vanuatu	14.4	76.8	8.8

Source: ADB (2009)

All the countries face challenges meeting balance of payments due to very large merchandise trade imbalance with the value of imports exceeding exports by several folds. The countries are also highly vulnerable to commodity price fluctuations due to heavy reliance on primary exports (Solomon Islands, Vanuatu and Fiji), weather related shocks (all countries), and, in some cases, internal political unrest (Fiji, Solomon Islands and Tonga). Balance of payments is highly dependent on current account receipts from tourism and private remittances transfers, as well as the capital account Official Development Assistance (ODA) flows. In 2007, officially recorded remittances accounted for an estimated 39% of GDP in Tonga, 23% in Samoa and 4.8 % in Fiji. Thanks to remittances Samoa and Tonga have been able to maintain sufficient levels of foreign reserves to meet a minimum four months of import cover, however, Fiji and Solomon

Islands foreign reserves dropped precariously low at the beginning of 2009². Fiji instituted a 20% devaluation of its dollar and has subsequently seen reserves return to a level which equates to 3 to 4 months of import cover (RBF, 2009).

Table 6: Current Account Balance % of GDP at current market prices

Country	2003	2004	2005	2006	2007	2008
Fiji	-4.5	-13.1	-12.5	-23.6	NA	NA
Samoa	-8.1	-6.9	-10.7	-16.8	-8.4	-9.5
Solomon Islands	2.2	15.2	-1.9	-6.9	-17.7	-14.0
Tonga	-2.9	3.8	-2.7	-7.8	-8.2	-7.9
Vanuatu	-10.3	-4.9	-3.8	-6.3	-6.3	-10.8

Source: ADB (2009)

The global economic slowdown is now taking its toll on growth and is seriously testing the ability of all these small countries to maintain macroeconomic stability. With the exception of Vanuatu, the countries are all facing significant increases in fiscal deficits, rising public debt and reduced policy space to respond to slowing growth without compromising medium term economic stability.

With tightening national expenditure frameworks, there will be increasing pressure to reduce public investments in agriculture and any such investments will need to be well targeted.

FIJI

Over the last two decades the country has been weakened by political instability and a cycle of coups. There has been rising unemployment, an increasing number of people living in squatter settlements and deepening poverty. High rates of emigration have resulted in a serious loss of valuable skills, experience and expertise. Increased Government debt with higher payments for interest has taken up funds needed for vital infrastructure. All major sectors of the economy weakened in 2007, after a military coup in December 2006 that led to the installation of an interim administration. Export income and business confidence fell and macroeconomic policies were tightened, resulting in an estimated 6.6 % contraction in the economy. The rural areas continue to be the home for about half of Fiji's population, though declining. However, Fiji's key exports (including water) are rural based, providing the greatest potential for future development and prosperity, particularly in the tourism, agriculture, forestry and fisheries sectors.

Subsistence farming and sugar cane production still dominate the agricultural sector, but the sugar industry is now in serious decline. The last few years have seen a haphazard uncontrolled reduction in the size of the sugar industry. This

² Fiji's foreign reserves fell to a critical level of around 1 month import cover (Reserve Bank Fiji Quarterly Review) and Solomon Islands reserves dropped below 3 months import cover (Central Bank of Solomon Islands Quarterly Review).

has been the result of non-renewal of significant percentage of leases over the period 2000-05, and since 2006, with the decline in preferential prices received for sugar sold to the EU³. The loss of the sugar industry would have catastrophic consequences for the economy and income distribution.

Export horticulture is now, after years of disappointment, the fastest growing part of Fiji's agriculture sector. The continued growth in niche horticultural exports has confirmed the competitive advantage of Fiji's agriculture in this area, although it is nowhere near sufficient to offset the accelerating demise of the sugar industry. Indeed, no single export crop has come close to approaching the importance of sugar for the Fijian economy; however, horticultural products as a group have come closest to this goal. Fiji's small private exporters have been successful in developing a wide range of niche exports. Around 200 different agricultural products are currently being shipped to 20 countries. The most significant examples are ginger to the United States and New Zealand, papaya to New Zealand, Japan and Australia, taro to New Zealand and the United States, breadfruit to New Zealand, eggplant to Canada and New Zealand, coconuts to Australia, organic banana puree to France, and noni to Germany. None of these products receive any protection on the domestic or international markets. All these niches taken together represent a significant degree of export diversification. These products represent the future for Fiji's agricultural exports.

SAMOA

The agriculture sector (encompassing crops, livestock, forestry and fisheries) offers some of the best opportunities for Samoa's development. Given the high proportion of people who are engaged primarily in the agriculture sector, and Samoa's relatively limited resource base, the agriculture sector must be developed if the majority of Samoans are not only going to satisfy their subsistence needs in future years, but meet their increasing needs for cash income. However, whilst the importance of the agriculture sector to the economy and rural livelihoods is recognised, the sector has yet to achieve its growth potential despite government reforms to improve the enabling environment for business development.

During the period 1994–2006, agricultural production fell at the average rate of 2.4% per annum, while varying from year to year due to the impacts of disease, changing weather conditions and commodity price fluctuations. The 1999 Agricultural Census confirmed the limited involvement of Samoans in

³ The successive cuts in the prices paid by the EU for ACP sugar sold under the Sugar Protocol of the Lome Convention have been: 5.1% in 2007, 9.2% in 2008 and 21.7% in 2009.

commercial agriculture. Three-quarters of the population belonged to the 14,725 agriculturally active households, but only 960 (6.5 percent) of these households were commercial producers, and only 8.1 percent of them had taken out loans for an agricultural purpose. The other agriculturally active households produced mainly for home consumption (7,549), or entirely for home consumption (6,216), while 1,597 households engaged in minor agricultural activity and 4,199 households were classified as non-agricultural. The large majority of agricultural holdings were less than 10 acres and few exceeded 50 acres. Ninety-one percent of cultivation took place on customary land, with freehold accounting for 6.1 percent, leased Government land 1.7 percent, leased customary land 0.8 percent and leased freehold 0.4 percent. If agriculture is to grow, there will need to be an increased emphasis on commercial production (SDS, 2008-2012).

Today larger-scale commercial agriculture is a small component of total agriculture, with coconut plantations (mostly government owned) surviving from the German colonial period accounting for most of the (minimal) output. Subsistence agriculture accounts for nearly half of agricultural output. Taro has traditionally been the country's most important agricultural product, but production continues to suffer the after effects of a devastating taro leaf blight outbreak in 1993. Following the introduction leaf blight resistant varieties and farmer-led selection programmes there has been a partial recovery, but Samoa has not yet re-established significant taro exports⁴. The negative effect on tree crops of a series of cyclones is also evident. Despite the decline in agricultural production and exports, Samoa's natural resource endowment and remote location mean that it has potential advantages for organic agriculture. Organic farming has gathered momentum since its beginnings in 1998. In 2006 there were 213 farms certified organic with an estimated area for organic cultivation of 7,243 ha (Bell, 2009), but current export capacity is relatively small and confined mostly to coconut oil and nonu.

Samoa has a very small domestic market and needs to participate in international trade to generate growth based on agricultural productivity. Therefore, it must establish international market niches that will allow the country to charge prices that will cover its high international trade costs. Nonu has offered such an opportunity and Samoa has seized it. The experience of nonu in Samoa demonstrates how beneficial high-value niche commodities can be for semi-subsistence village farmers.

SOLOMON ISLANDS

Between 1998 and 2002 civil unrest and ethnic tension prevailed and resulted in social upheaval and violence. During that period GDP fell by an estimated 24

⁴ Taro exports valued at SAT\$ 600,000 in 2007/08 – Central Bank of Samoa Bulletin December 2008.

percent and businesses and government services were severely disrupted. In July 2003, at the request of the Solomon Island's Government, a Regional Assistance Mission (RAMSI) was called in to assist the country. RAMSI has helped to restore law and order, but the domestic political situation remains fragile. Since the end of the civil conflict real GDP growth has averaged over 7 percent, but this has largely been based on unsustainable logging⁵ and increased aid flows. Whilst there has been improved economic performance in recent years this has been offset by high population growth (2.8 % annually). With an estimated GDP per capita of around US\$ 750, the Solomon Islands still ranks among the poorest countries in the Pacific.

The Solomon Island's economy is characterised by a dualism, which originates from the country's past. There is a large under-capitalised rural sector, linked only by smallholder production of copra and cocoa to the commercial export sector, where fishing and logging account for 80 percent of the economic output. Primary sector export commodities such as copra, cocoa, palm oil, wood products and fish are highly vulnerable to adverse weather conditions and cyclones in addition to world price fluctuations. Several factors including poor transportation, the narrow economic base, and limited physical infrastructure contribute to the difficulty of developing a self-reliant economy. The country is still mainly a primary producer, with little processing capability. The shortage of trained human resources is also a fundamental constraint

The agriculture, forestry and fisheries sectors make up about 50 percent of GDP and provide the country's top three export commodities of timber, fish and copra. With an estimated 84 percent of the population depending directly on the sector, a critical challenge is developing agriculture to stimulate growth in the rural economy and rural incomes. This will be essential to achieve poverty alleviation, manageable rural urban migration, and ultimately societal stability. Whilst there is substantial potential for smallholders to promote agriculture as a driver of economic development in rural areas, this needs to be supported by strengthened institutions, improved infrastructure and appropriate research and extension that emphasises smallholders, and has an adequate focus on traditional crops. Current production is primarily subsistence, but Solomon Islands' has substantial arable land available to expand agriculture, and has a climate and soils which could be harnessed to supply specialty and seasonal products to industrial country markets. Commercial flower production and marketing is just taking off and is proving to be an ideal crop for smallholders.

TONGA

⁵ Log production is now triple the level of the early 2000s and more than six times above the sustainable level.

Tonga's structural composition of the economy has not changed significantly in the last decade, although exports have fallen significantly. The economy is heavily based on the remittances from Tongans living abroad, mainly in Australia, New Zealand and the United States (around 40 percent of GDP). Agriculture (including fishing) is the second largest income source, followed by tourism. The manufacturing sector contributes only about 3 percent and consists of handicrafts and a few small scale cottage industries. Tonga's economic growth has been frustrated by the lack of a dynamic private sector. The public sector is large and state-owned enterprises have traditionally occupied sizable portions of the productive arena, controlling around 20 percent of fixed assets yet contributing only 6 percent to GDP (IMF, 2009)

With an estimated population of 102,724 persons living on 36 small islands land resources are limited, and only 24% of the country's 650 km² is arable. Tonga is experiencing a number of socio-economic and environmental challenges. The growth in urbanisation, being the result of rural migration from both the outer islands and Tongatapu itself, has put high pressure on the land, in particular around the capital Nuku'alofa where almost 30% of the country's total population is concentrated. The country runs a deep trade deficit which has been increasing in recent years. At present, the total value of merchandise imports is almost 20 times higher than the total exports; approximately 14 % of these imports are food products. Commercial production and exports have been dominated by a few primary products (squash, fish, vanilla and root crops), making the economy vulnerable to changes in export markets. Increasing agricultural production for the growing domestic market (import substitution) and for export is accorded high priority by the government.

Agricultural production is still the predominant economic activity, accounting for about 25 percent of GDP, 70 percent of total merchandise export, and 40 percent of employment. Over 64 percent of Tongan households (10,102) are involved in agriculture, out of which 59 percent are subsistence, 38 percent are involved in subsistence agriculture with cash crops and only about 2 percent are fully commercial crop producers (Agriculture Census 2001). The agriculture sector therefore is important for employment, as a source of domestic food supply, for cash income, foreign exchange earnings, and for raw materials in processing and handicrafts. However the sector is under performing and the output has been in decline for a number of years. Considerable potential exists for improved performance. Tonga has a good growing climate and fertile soils, and is well placed to serve markets in both southern and northern hemisphere. The growing urban market also offers considerable opportunity for smallholder farmers.

Root and tuber crops are principally for domestic consumption, but export is gaining significant importance in recent years, with an increasing volume of

exports (particularly yam, taro, and cassava) destined largely to ethnic markets in New Zealand, Australia and the USA (including American Samoa).

VANUATU

Vanuatu's overwhelmingly rural population is dispersed across more than 80 islands, which stretch longitudinally over 1,300 km of ocean in the southwest Pacific. The country has a total land area of about 12,000 square kilometres with an exclusive economic zone that covers a sea area 60 times as large as its land surface. The two largest islands of Espiritu Santo and Malekula measure 4,248 and 2,053 square kilometres, respectively, and together with the next six largest islands comprise 87 percent of the total land area.

Vanuatu has a relatively small, open economy with many development and structural constraints. But the nation also possesses some important advantages including a strong traditional culture which promotes social stability and family welfare; and fertile land, natural resources and a pristine environment. The economy is based primarily on subsistence or small-scale agriculture, which provides a living for over 70 percent of the population. Fishing, offshore financial services, and tourism, are other mainstays of the economy.

Development is hindered by dependence on relatively few primary commodity exports, vulnerability to natural disasters, and long distances from main markets and between constituent islands. Nevertheless, in the last few years there has been strong economic growth, positive government revenues and good debt management. GDP increased in 2008 by an estimated 6.3%, marking the sixth consecutive year of positive growth. This reflected strong expansion in tourism, real estate, and finance, as well as an improved contribution from agriculture. However, the economy remains fragile, with a growing population scattered across many, often isolated island communities. To date the rural population has seen relatively few benefits of economic growth and internal migration continues to fuel the expansion of urban squatter settlements and unemployment.

A productive agriculture sector is important for the national economy, vital for food security and rural poverty alleviation, and also provides links to downstream industries such as agricultural processing. Agriculture (including forestry and fisheries) accounted for approximately 15 percent of GDP and almost all merchandise exports in 2006. Agriculture consists of two sub-sectors: subsistence smallholder farming, and large commercial farms and plantations. Coconut oil, copra, kava and beef contributed about 58 percent to total exports during 2001-2005⁶. The GDP share of agriculture and fishing however, understates the contribution of these sectors to living standards in Vanuatu. Around 76 percent of the population live in the rural areas and grow food for

⁶ Annual Statistical Indicators 2005, National Statistics Office

subsistence and cash needs. Many in the urban areas also supplement their cash incomes by gardening. The smallholder sector, given its constraints, is reasonably efficient and provides a relatively high subsistence living standard and a high degree of food security. Furthermore, the smallholder involvement in the agricultural cash economy has increased quite markedly in recent years. Outputs from cash enterprises and export commodities are more dominant than the purely commercial plantation agricultural sector; smallholders produce 80 percent of copra, 70 percent of cocoa, 20 percent of beef, and all kava. A high wage structure for unskilled labour⁷ in formal employment means that Vanuatu is no longer competitive in plantation agriculture and will pose a constraint on the viability of larger scale plantation forestry that relies on hired labour.

Therefore, economic, social and infrastructure development policies need to fully recognize and build on Vanuatu's dynamic customary institutions that provide food security and socio-economic stability through the traditional communal family system.

Vanuatu's fertile soils and generally favourable climate gives it the potential to produce a wide range of agricultural, forestry and fisheries products for both domestic and export markets. But Vanuatu's island geography and susceptibility to severe cyclones, in addition to its small size and distance from markets results in relatively few products for which it has a competitive advantage over larger neighbouring countries. Copra remains an important agricultural export commodity, returning more revenue to Vanuatu in 2005 than beef and kava combined. However, it is an industry based on outdated, labour-intensive production systems and return to labour is extremely low. Vanuatu's comparative advantage is seen to be in organically grown low-volume and high-value products. To further develop niche organic markets will require a robust certification process, adoption of minimum quality or grading standards, reliability of supply, effective transport and marketing systems and a reasonable return on investment for all involved in the value chain. With the assistance of French chocolate manufacturer KAOKA Vanuatu has put these conditions in place to export organic cocoa. The Vanuatu Organic Cocoa Growers Association (VOCGA) now exports around 300 tonnes of organically certified cocoa beans annually to France.

SELECTED SUCCESS CASES

Agricultural enterprises were selected in the fresh horticultural produce, processed fruit, floriculture, root crop and cocoa sectors. The selected cases were perceived as commercially successful and involved significant numbers of

⁷ The legal minimum rural wage of vatu 26,000 (AUD 300 /month) applies to unskilled workers formally employed in the agricultural sector.

smallholder farmers and possibly other enterprises in the supply chain and offered good potential to contribute to rural incomes and to the wider economy. They also offered potential insights with interest to the wider region.

Table 1 provides some key information on the five cases chosen for the study.

Table 1: Selected Case Studies

Country	Sector/Business Focus	Drivers of initial “take off” ⁸	Market focus	Size of Operation
Fiji	Fresh horticulture exports /HTFA ⁹ quarantine treatment by Natures Way Cooperative (NWC)	Public-Private Partnership	Fresh horticulture exports to New Zealand, Australia	Export 1,200 t pa., Estimated 330 full-time farm jobs, 176 exporters’ jobs and 18 by NWC. Annually generates FJD 2 m in export earnings and FJD 800,000 in farmer income (40%)
Samoa	Nonu ¹⁰ fruit processing and export	Private Sector	Processing of Nonu fruit juice and dry products for export to international markets (principally USA, Australia & Japan)	85+ growers and 4 processors. Peak export (2005) 1.5 m litres juice valued at SAT\$8.3 m. Total value to economy 2000-2008, SAT 33.5 m farmers’ share 24%
Solomon Islands	Floriculture/fresh cut flowers, ornamentals and floral art	Private Sector ¹¹	Flower sales to domestic markets	Around 500 households produce commercially, 40 regularly market through Honiara Central Market. Honiara has 20 part-time florists.
Tonga	Root crops/yam and cassava for domestic and export markets	Private Sector	Root crop sales on domestic and export (NZ, Australia, USA & American Samoa) markets	80-90% of farm households engaged, with estimated 4,500 ha harvested to produce around 40,000 t pa, with 3,000 t pa exported
Vanuatu	Cocoa/ VOCCA ¹² organic cocoa exports	Public- Private Partnership/ FDI ¹³	Export of single origin organic cocoa for chocolate manufacture	1,205 smallholders, export 200-400 t pa. Peak year (2004) valued at 83 m vatu with 50 m vatu farmer income (62%)

⁸ The key drivers for establishing the critical conditions which enabled subsequent growth in the sector

⁹ High Temperature Forced Air (HTFA) quarantine treatment involves slowly heating fruit (5-6 hrs) to a temperature that can kill fruit fly larvae and eggs (around 47.2 °C).

¹⁰ *Morinda citrifolia* locally called nonu in Samoa and noni in some other Pacific countries. Noni juice is marketed as a health food supplement.

¹¹ With donor support

¹² Vanuatu Organic Cocoa Growers Association is a Ni-Vanuatu cooperative growing, fermenting and exporting organic cocoa dry bean.

¹³ Foreign Direct Investment of KAOKA French Chocolate Manufacturer

SUCCESS FACTORS

Factors identified as critical to the “take-off” of value chain development (VCD) include: market pull, entrepreneurship including good management and value chain coordination, good quality control, trust and transparency, timely payments recognition of traditional systems and returns to effort, and productivity improvements. These issues are elaborated in turn. However, the sector developments have also been conditioned by the type and scale of public sector support, both in the degree to which the basic conditions have been established and in the extent to which public sector support has facilitated as opposed to hindered investments required for sector take-off. The type of support provided, and the mechanisms by which it was delivered vary across the studies, reflecting in part, the different levels of sector and economic development, in part the ability of the private sector operators to leverage appropriate levels of support from government and donors and in part “luck”.

Smallholder farmers in the Pacific respond to market demand

MARKET PULL

Smallholders in the Pacific respond to market demand. A wide number of episodes of growth have occurred in various agricultural exports across the regions (for example, squash in Tonga, passion fruit in Samoa, vanilla in PNG, kava in Tonga, Fiji and Samoa). Often however, these episodes have not been sustained, and smallholders have been quick to pull back, suggesting that the market must also have the capacity to remain profitable and accessible in the longer term. Therefore an essential precondition for any successful agricultural enterprise is that there must be a sustained market for the product that will assure farmers consistent and attractive financial benefits, and give farmers the confidence to make the necessary investments and changes in practice to supply these markets.

Establishment of the HTFA quarantine treatment facility at Fiji’s international airport opened substantial export market opportunities for horticultural products in New Zealand (e.g. papaya, eggplant, mango, and breadfruit), Australia (papaya) and potentially USA. Exporters who are members of Nature’s Way Cooperative and thus have access to the treatment facility have provided the linkage for small farmers to these markets. Development of a parallel domestic and tourist market for fresh horticultural produce has lowered risk for farmers growing these products.

Product promotion by Tahitian Noni International (TNI) and pyramid selling created an international market and initially high world prices for nonu fruit which stimulated the growth of the nonu processing/ exporting industry in Samoa. Farm-gate collection by processors provided a ready market for village fruit growers/collectors to access.

An abundance of government and church functions, the Regional Assistance Mission to Solomon Islands (RAMSI) with a large influx of expatriates, together with the provision of a dedicated market space for flowers in Honiara Central Market stimulated a demand for cut flowers, ornamental pot plants and floral arrangements.

In Tonga, a large domestic staple food market coupled with the requirement for root crops at cultural/ ceremonial events, use for livestock feed, and a growing export market principally to ethnic groups in New Zealand, Australia and USA (including American Samoa) have provided a sustained market demand. Development of road-side market stalls and a cadre of unregulated root crop exporters (many of whom are also farmers) have facilitated market access for small farmers.

Deregulation of cocoa marketing in Vanuatu, a growing world market for single origin (organic) chocolate, the direct involvement of French chocolate manufacturer KAOKA, which facilitated the formation of a producer/marketing cooperative VOCCA, has opened a niche market and provided a stable market demand and premium prices for small farmers' cocoa bean in Vanuatu.

KEY LESSONS

A strong market demand and facilitated access to markets is necessary to stimulate smallholder commercialisation. For this to be realised improvement in domestic and overseas market linkages are needed. Over the past much focus on agriculture development in the region has been on supply side issues without sufficient attention paid to how the farmer is going to market the new surplus. Basically, if a farmer cannot sell surplus to his subsistence requirements why grow it? Generally in the PICs, the incentive to grow more hasn't been there because the market opportunities haven't been identified and communicated to farmers. In times of a strong and sustained market demand farmers will also more actively seek and adopt productivity enhancing technology and management methods.

The barriers to entry differ across the sectors studied and this determines the types of mechanisms that might need to be put in place to facilitate smallholder participation in new markets. Producers and other stakeholders in product chains that are part of the traditional system and require simple value added processing (such as flowers, root crops, and noni) face lower barriers to entry than those in chains where more "sophisticated" processing is required (such as papaya, and cocoa)

Improved market intelligence, linkages and promotion are key factors. In general, the relatively small agribusinesses in the region do not have the resources and capacity for undertaking market intelligence studies to identify market potential

In times of strong and sustained market demand farmers will more actively seek and adopt productivity enhancing technology and management methods

and specific market opportunities, or for rigorous promotion of their products. Basic information on end markets has the character of a common good that is shared among chain operators and therefore there is room for government/ external development agencies to conduct, facilitate or commission both domestic and overseas market research as an essential contribution to chain upgrading.

In the region more attention needs to be devoted to developing the capacity of agribusinesses (processors, exporters, traders – the “middlemen”) which pull farm products into the market place and open the pathways for commercialisation of smallholder farms.

Organise the marketing of organic products such as cocoa, due to the high cost of transactions involved in negotiations with single farmers, requires an intermediary (producer) organisation such as VOCCA. VOCCA has been an essential instrument for the organic-cocoa buyers, as it is able to organise an efficient marketing system, purchasing the product from farmers and delivering to buyers in a timely, economic and convenient manner.

A robust domestic market for a potential export product, which is the case for root crops in Tonga and horticultural products in Fiji, helps reduce the vulnerability of farmers to fluctuations in the international market. In Solomon Islands developing a robust domestic supply chain is preceding any attempts to develop export markets.

ENTREPRENEURSHIP

All of the successful examples of value chain development investigated in these studies have been private sector driven. Strong leadership and consistent high quality management with long-term commitment have been identified as crucial ingredients for success. However, human resource constraints in the region and the general lack of agribusiness skills can lead to undue reliance on key individuals, a phenomenon being referred to as “key person dependency”.

Prior to the establishment of Nature’s Way Cooperative (Fiji) Ltd, quarantine treatment throughout the Pacific islands was undertaken by government quarantine departments. These were chemical treatments such as ethyl dibromide (EDB) and methyl bromide and were usually provided free of charge or at highly subsidised rates. The concept that quarantine treatment would be undertaken by the industry itself and operated on a commercial basis was a major departure from the institutional norm. Over the last decade NWC has grown from a small business handling just 30 tonnes of papaya to an agribusiness treating 1,200 tonnes of fruit (papaya, mango, eggplant and breadfruit) annually for export. Other countries in the region where treatment facilities have been owned and operated by government have not fared well.

All of the successful examples of value chain development have been private sector driven

The nonu industry in Samoa has been developed through private sector drive and facilitation with no specific government support having been accorded. Participation in the industry by several experienced agri-business entrepreneurs has provided a competitive environment which has been vital to the success of the processing and exporting of nonu products. The processors willingness to innovate and take risks has been invaluable for the development of the nonu industry.

In the Solomon Islands floriculture has also been driven by private sector ambition. However, for many participants in the floriculture industry their personal passion for cultivating flowers has led to their commercial involvement, but currently their business and marketing skills remain underdeveloped. Acknowledgement must therefore be accorded to the public sector for support for critical skills training and for recognising the need for and providing a dedicated space for flower sellers in the municipal market.

In Tonga the root crop industry has been developed by farmers who have moved along the value chain to also become marketers and exporters. Open competition between marketers and exporters (i.e. licences are open to all) should promote healthy competition, but there still remains a need to better organise the production and export marketing chain.

The proactive involvement of French chocolate manufacturer KAOKA in the establishment of VO CGA and in its continued operations has been critical to the success of the organic cocoa industry in Vanuatu. KAOKA meets the cost of technical support and guidance to cooperatives, which includes the provision of a highly competent CEO for VO CGA. The experience of VO CGA (and NWC in Fiji) has demonstrated that with long-term high quality management a substantial agribusiness can successfully be run as a cooperative in the Pacific islands.

KEY LESSONS

Successful agricultural enterprise is generally private sector driven with profit as the foremost objective. A culture of entrepreneurship with associated skills in business practice is not widespread in the Pacific region, particularly in rural village societies. Gaining a full appreciation of the significance of ethnicity and cultural norms in agribusiness development in the Pacific region warrants further investigation. If ethnicity or cultural norms are critical, ignoring them will lead to incomplete explanation, and worse still, may result in misguided policy recommendations (Francois and Jabojnik, 2003).

Key person dependency threatens the sustainability of agribusiness operations and there is a vital need to institute timely succession plans with integral training components.

Gaining a full appreciation of the significance of ethnicity and cultural norms warrants further investigation

For successful Agribusiness development there can now be no compromise on quality and consistency of supply

Capacity building for entrepreneurship and in business skills requires a priority focus and may entail revisions in formal education curriculum as well as grass roots approaches which encourage innovation and enterprising behaviour. Tertiary agriculture students in the region currently are unlikely to encounter academic teaching and research programmes in the relevant domains of innovation and entrepreneurship. However, the recent restructuring at the University of the South Pacific to bring the School of Agriculture into the Faculty of Business and Economics is recognised as a positive move.

GOOD QUALITY CONTROL

The main objective of most industry standards and requirements is to manage risks relating to product safety and quality. During the last several years, there has been a strong upsurge of interest in process based standards as well. Process based standards have focused on environmental sustainability, social and economic sustainability, fair trade, food safety, guarantees of origin, or a combination of traits (FAO, 2007).

For successful agribusiness development, there can now be no compromise on quality and consistency of supply. The NWC have ensured that products for export have consistently met the consumer market demands on quality. The nonu industry has been proactive and dynamic in its attempt to upgrade product quality and maintain standards. In 2003 a regional industry association was registered – Pacific Islands Noni Association (PINA) which has promoted quality standards and facilitated technical support to members in this area. In 2009 Samoan processors formed their own industry association. Processors/exporters have recognised that appellations of origin, based on strict standards, quality criteria and production methods are a useful promotional tool for their products.

Whilst there are niche market possibilities for single origin and organic commodities from the Pacific, the Vanuatu study highlights that adhering to high quality standards is fundamental to accessing these market options. The cocoa supplied to KAOKA must not only be organically certified, it must also be of high quality. VOCCA requires its member processing cooperatives to strictly adhere to a series of processing steps and maintain their facilities in good order. VOCCA is also responsible for the maintenance of systems that ensure the traceability of the product. This involves the internal production controls and the description of production plots and processing facilities. Good traceability is not only essential for certified organic production but is also becoming increasingly important for other markets. VOCCA has never received reports of banned substances at any level of contamination.

KEY LESSONS

To participate in the more demanding markets, investments in product and

To participate in the more demanding markets, investments in product and process upgrading are a prerequisite.

process upgrading are a prerequisite.

Markets for fresh and processed agricultural produce require consistent high-quality standards. Exporting horticultural produce to markets in Australia, Japan and United States is very competitive and subject to guarantees regarding quality and supply. Countries considering high-value horticultural exports need to be certain that they can meet exacting quality and food safety standards. HTFA quarantine treatment is compliant with requirements to participate in organic markets, whereas the chemical based or irradiation treatment used by many larger scale competitors is not.

A major challenge for organic certification is in auditing and compliance of large numbers of small farmers and processing operations. Companies wishing to source significant volumes of high quality organic and single origin commodities from the Pacific islands need to be proactively involved in the development of these industries including making significant investment. The production of organic cocoa in Vanuatu is being done on contract, as an integrated operation facilitates a clear crop identity from farmer to chocolate manufacturer and retailer.

Industries should have the primary responsibility for setting standards and monitoring compliance. Government should facilitate legislation and regulations where appropriate.

The public sector (including donors) has an important role to assist with compliance with public and private certification and standards. Investment in training to meet standards will reap significant rewards.

TRUST AND TRANSPARENCY OF DEALINGS IN THE SUPPLY CHAIN

Coordination and integration in supply chains is increasingly becoming an essential strategy to increase competitiveness in the market place, particularly for perishable and vulnerable processed products –which would include fresh horticultural products (Fiji), Nonu products (Samoa), flowers (Solomon Islands), and frozen root crops (Tonga). However, successful integration of supply chains depends essentially on building trust; this requires transparency and sharing of information amongst chain participants. For some processes, such as tracking and tracing systems e.g. the organic cocoa chain, information transparency is a prerequisite.

In the context of Pacific smallholder agriculture the institutions of contract, law and enforcement are not well rooted, so that building trust will be vital for productive chains to succeed. Trustworthy people are those who keep their promises, even when doing so is both costly and requires taking actions which may not maximise payoffs. Such trustworthiness is extremely valuable when

Integration of supply chains depends essentially on building trust

relationships cannot be fully circumscribed by contracts, but when trade would be beneficial nonetheless (Francois and Jabojnik, 2003)

KAOKA/VOCGA has been exceptionally transparent in its dealing with member cooperatives and shareholders and has invested considerable resources into developing a good relationship amongst suppliers. They have also applied a transparent pricing formula with good organisation and a practical method of payment to help encourage confidence and goodwill. This seems to have created a high degree of supplier loyalty. Nevertheless, KAOKA have considered it important that the terms of the agreement are fully spelled out in the form of a contract and are frequently reinforced by the VOCGA CEO and his assistants.

Inevitably it proves difficult to maintain relationships where benefits are unfairly distributed or perceived to be by some chain participants. The nonu producers in Samoa are very suspicious of the processors, believing them to be making excessive profits at their expense. This distrust is magnified when global price decline is transmitted through to them. In reality, the study identifies that to date producers have received around 24% of the total value added from the nonu industry whilst shouldering minimum risk having invested little other than their labour. Increased transparency and building trust will be essential for chain upgrading to meet increasing competition in the international market.

KEY LESSONS

Personal trustworthiness considerations play a critical role in determining the reliability of trading partners and hence the type of production that will be feasible. A pre-existing atmosphere of trust often arises from a common earlier ethnic or social connection and can be a vital ingredient for successful enterprise development.

Nurturing a cooperative climate and building trustworthy relationships should constitute a key task for successful chain management.

Public sector (donors) can facilitate independent facilitators – honest brokers – to help in overcoming lack of trust among enterprises and farmers, and to encourage trust building. Third parties may also be helpful to overcome or modify imbalances in bargaining power which could create the necessary conditions for enhancing trust. NGOs are frequently playing a facilitating role in this area in the Pacific region; however there is a danger that they can unwittingly have a distorting effect on markets which is generally unhelpful to sustainable commercial development.

TIMELY CASH PAYMENTS

A key aspect of trust relates to payments to farmers for the basic product. Cash-in-hand on delivery is a key incentive to smallholders in the Pacific. Nonu processors in Samoa have paid spot cash prices to growers/collectors at the farm

gate and at the factory. This has helped to retain grower interest even when prices have fallen significantly. KAOKA-VOCGA and the primary cooperatives network have put in place a highly efficient financing and cash flow management system. The system has resulted in the sustained payment of cash on delivery for wet beans at the processing centres. In contrast, fruit farmers registered to exporters in Fiji get paid anywhere from a week to a month after the fruit has been supplied and many are tempted to sell to other traders who poach fruit meant for export by paying spot cash at the farm gate.

Whilst cash on the nail may have benefited small farmers, processors and exporters have not always fared so well, and this may have held back value chain development. Florists in Solomon Islands have to pay cash-on-delivery to producers but often have to wait considerable time for payment for their floral arrangements, especially when the client is a government department! A similar situation exists for nonu processors/exporters who have reported problems in payments from some overseas buyers. For NWC, a negative management issue has been escalating arrears in payments for treatment from some of the larger exporters. These examples highlight the need for these chain agents to have sufficient working capital or appropriate credit arrangements in place.

KEY LESSONS

Cash on delivery is a critical incentive to engaging smallholders who can move in and out of market segments with relative ease, and may be of greater importance than the actual price received.

Sufficient working capital is essential for intermediaries in the value chain (traders, processors, exporters etc.). Attention needs to be focused on affordable credit facilities for these operators. This issue is further discussed in the section on Constraints, below.

FITS TRADITIONAL SYSTEMS

The first responsibility of the small farmer in the Pacific is to secure food for the family, and in the Pacific context the “family” can be quite large! Subsistence food production in traditional farming systems together with subsistence and artisanal¹⁴ fishing continues to be the basis of food security in the region and provides resilience against external shocks, either economic (price spikes, global recession) or natural (cyclones, floods, droughts, pests and diseases etc.).

McGregor et al (2009) have highlighted evidence of the importance of traditional smallholder farming systems in safeguarding food security which includes:

¹⁴ Traditional fisheries involving fishing households (as opposed to commercial companies), using relatively small amount of capital and energy, relatively small fishing vessels (if any), making short fishing trips, close to shore, mainly for local consumption (FAO definition).

The first responsibility of the small farmer in the Pacific is to secure food for the family

- the rapid recovery of the Samoan economy following successive natural (cyclones) and biological (taro leaf blight) disasters with other traditional crops filling the void;
- the remarkable turnaround of the Fijian economy following the devastating ‘100 year’ drought of 1997/98;
- the tempering of the humanitarian disaster associated with the ethnic conflict in Solomon Islands and the civil war in Bougainville; and
- the production response of PNG root crop growers to the sharp increase in imported grain prices following depreciation of the kina in 1994.

A key challenge for the region is developing pathways for commercialisation of traditional farming systems, which allow increased cash-generating opportunities for rural households, without sacrificing family and community cohesion and ultimately food security.

The pathways for commercialisation described in the case studies for Samoa, Tonga and Vanuatu have identified the benefits to small farmers when the commercial crop is part of, or can be easily integrated into traditional farming systems. As the authors of Vanuatu study so aptly describe:

“A major advantage that cocoa offers smallholders is that it can be integrated into a food garden or grown under mature coconuts. Following the planting of yams, cocoa seedlings can be planted along with taro, bananas, and other food crops. In the same garden it serves as an excellent companion crop to kava, offering shade to the young kava plants. Following 2 to 3 years of food production, a mixed cocoa kava block is left, with stand-alone cocoa remaining after the kava is harvested. Like copra, cocoa also has the advantage of always having a market, albeit in the past at relatively low returns. Through VOCCA the returns from cocoa have been greatly increased while still remaining a good component of the traditional farming systems.”

KEY LESSONS

In the drive for greater productivity, the benefits of the traditional farming systems should not be taken for granted. Among those benefits has been a level of subsistence security that is becoming increasingly uncommon in the developing world.

Reinforcing value chains for products based on local and traditional crops, where small-farmers may have some comparative advantage and specialised knowledge should be encouraged. Particularly when this can be coupled with promoting geographic origin, branding and marketing of niche market products.

A smallholder farmer's sustained interest in commercial agriculture will be based on the returns to effort balanced against risk

GOOD RETURN TO EFFORT

“The Business of Papaya: 1 kg/tree/week, 800 trees per acre, \$800 per week. Papaya farmers must be getting rich! Buy one papaya for \$0.50 from the farmer – sell that same papaya to a Kiwi for \$5.00. Exporters must be getting rich!”¹⁵

In the final analysis, a smallholder farmer's sustained interest to participate in a commercial agriculture venture will be based on the returns to effort balanced against risk. Smallholder village agriculture relies predominantly on family labour therefore the availability and opportunity cost of labour are factors critical to the development and competitiveness of any agricultural industry dependent on smallholder production. In the region, various factors including, migration, remittances, seasonal overseas labour programmes urbanisation, growth of rural tourism activities and social obligations (including subsistence food production) impinge on the opportunity cost of labour for commercial agriculture. Also, often missed in the focus on cash income generation are the many other types of work that result in village and family security and which build social capital for individuals and families. What appears clear, however, is that high returns to effort are critical to encourage consistent participation of Pacific semi-subsistence farmers in more commercial agriculture.

Unfortunately, there is no data on either land or labour productivity for nonu in Samoa and hence no information on which to establish current returns to effort. In the early years of the nonu market growth processors are reported to have paid a farm gate cash price of SAT\$1 per kg for nonu fruit, whilst at market lows the price dropped to as little as SAT\$ 0.20 per kg; a price many farmers considered too low to justify effort. The Solomon Islands study reported that there is confusion when costing floral arrangements between the labour costs of the florist making the arrangement and a profit component. This is resulting in large price variation in arrangements from different sources.

Good data in the Vanuatu study has revealed that VOCGA members growing cocoa inter-planted with coconuts earn around 2,500 vatu per day of household labour effort, compared with 1,100 vatu per day when farmer produced their own dry beans and sold to the Vanuatu Commodity Marketing Board. These improved cocoa marketing arrangements means a more than doubling of the return to village smallholders. Furthermore, a VOCGA shareholder planting cocoa in a yam garden and selling wet beans to a central processing facility is able to more than triple this amount for their effort. Therefore through the improved marketing provided by VOCGA the participating small farmers have been able to substantially increase their income and return to effort.

¹⁵ Source: FAO-NWC Papaya Farmer-Market Linkage Activity – training materials.

KEY LESSONS

Primarily due to social factors, the actual opportunity cost of family/village labour to participate in commercial agriculture may be considerably higher than the prevailing agriculture wage rate.

Improved collection of data on the opportunity costs of labour and its use in gross margin analysis would allow farmers to make better informed choices before engaging in alternative commercial activities reliant on increased use of labour. A pre-condition for this is introduction of and training in basic farm record keeping and farm management tools, i.e. cost of production, labour input sheets, and gross margin analysis.

Such data would also assist policy makers in identifying and alleviating the constraints to processes of smallholder transition during commercialisation, which might involve the diversification of income sources and possibly an eventual shift away from agricultural production.

IMPROVED PRODUCTIVITY

Comparative advantage based on the natural resource base has opened market opportunities for smallholder farm products, but to retain or grow a market share comparative advantage must be coupled with competitiveness. However, global markets are dynamic making “competitiveness” a moving target, therefore the capacity to innovate and respond to change to keep up with competition is an extremely important attribute necessary in a modern market economy.

All of the studies have highlighted the need for improved farm productivity to increase price competitiveness on both local and international markets and to improve farmers’ returns to effort. For papaya exports, the Fiji study reported that to grow market share in the major markets would require substantial improvements made along the papaya value chain. A key area for improvement¹⁶ included becoming more price competitive. This may imply reducing the price paid to growers. To retain their interest in supplying at a lower price, investments in increased on-farm productivity would be required such that reducing farm gate prices and increasing farmer income are seen as compatible.

With increasing global competition and a depressed market environment for nonu, Samoa must explore every avenue to increase its competitiveness and market share in the international market. Samoan nonu has enjoyed a comparative advantage to date due to the natural resource base, but significant efforts will need to be devoted to maintaining competitiveness in a changing

¹⁶ Other areas identified where improvements could be made were in product quality and marketing techniques.

*Global markets
are dynamic
making
“competitiveness”
a moving target*

world market. The Samoa study reports that there is considerable opportunity to increase both land and labour productivity for nonu through appropriate research as virtually nothing has been done in this area to date.

The Solomon island report argues that the relatively high price of flowers at Honiara Central Market could be inhibiting growth of the local industry. One avenue considered to reduce prices is to increase productivity through more blooms per stem, and/or more stems per plant. In Vanuatu, cocoa yields remain low – around 500 kg/ha. The study identifies that there is considerable scope to increase farm income by raising productivity within the context of existing farming systems through the introduction of an extension programme based on the Integrated Pest and Disease Management (IPDM)/Farmer Field School methodology.

KEY LESSONS

Increased investment in agricultural research and development is vital to support competitive smallholder agricultural enterprise in the Pacific region. With so many people in the region relying on the agriculture sector for food security and livelihoods, agricultural research is a public good that should receive priority focus in government policy and budget allocation. However, significant human and financial resource constraints in the small island countries limit their capacity to deliver quality research support. Therefore, regional and international research agencies have a critical role to play in making agriculture more productive for small farm development in the region.

Small farmers face a significant challenge to increase productivity (land and labour), particularly under certified organic cultivation regimes. More attention needs to be focused on maintenance of soil nutrients, pest control and disease management for long-term sustainable yields. Practices must also seriously consider labour productivity, recognising that return-to-effort is a key motivational factor for small farmers in the Pacific. Whilst international “best practice” is established in regions of the world, more attention needs to be focused on adaptive research and appropriate technology transfer in the Pacific region. Improving the delivery of extension services to small farmers also remains a key challenge.

Input supply is also identified as a constraint to further increases in productivity that requires attention. In Fiji, NWC has supplied field crates to producers. In the Solomon Islands, import duties have been identified as constraining access to affordable floriculture materials. In Tonga, inputs are readily available, but affordability is an issue, with the current consumption tax, although refundable after a period of months, creating cash flow difficulties for producers.

APPROPRIATE PUBLIC SECTOR SUPPORT

How and by whom critical services such as research and development, extension, data collection, can best be provided is an open question. Such services tend to be underprovided by the private sector given their characteristics. In essence, the provider of such services would be unable to cover their costs (let alone make a profit) because it may not be possible to exclude non-paying users from benefiting (for example, advise on plant protection practices) and/or users may not see the full benefit of the service and therefore be unwilling to pay a price for the service that reflects the true benefit (for example, data collection and dissemination on local market activities).

Traditionally, therefore, government has been viewed as the provider of these services. However, widespread inefficiencies in delivery and the tendency of governments to also become actively involved in input and output marketing (often undermining the participation of private sector intermediaries) has contributed to a perception that governments have not played a constructive role in value chain development¹⁷.

While there are certainly examples within the case studies that support this case (these are discussed in the CONSTRAINTS section), the studies also provide evidence that public sector support has been important both in developing the initial conditions from which value chain development has taken place and in supporting the process of development.

The studies also indicate that:

- (i) Public sector support needs to be more broadly defined. Government funding and provision of key basic conditions and services may not be appropriate, but alternative mechanisms whereby the public sector, more broadly defined to include donors and civil society, facilitates the provision of such services may be more effective.
- (ii) The role of the public sector at different stages of commercialisation/ value chain development differs.

PUBLIC SECTOR SUPPORT FOR BASIC CONDITIONS

INFRASTRUCTURE

Physical access to markets is obviously crucial for commercialisation of smallholder farms. The Pacific 2020 Background Paper on Agriculture identified

¹⁷ In the Tonga and Vanuatu cases, the deregulation of export marketing has been shown to encourage growth and competition with overall positive benefits for small farmers.

The top three priorities for investment are infrastructure, infrastructure and infrastructure

investing in infrastructure to be the most important factor to promote successful commercial agriculture development in the region. The highest infrastructure priorities being roads (both trunk and feeder), all-weather jetties and wharves, and telecommunications. Investment was also considered to be required in airfields, market facilities and rural electrification.

The Samoan Government has focused considerable attention to upgrading transport infrastructure, roads, ports, the international airport, and domestic market facilities. Through a government-private joint venture international air services have been improved through lower prices and increased destination connections. The telecommunications industry has also been opened for competition in the mobile phone sector, significantly reducing costs and increasing population coverage. Samoa has a relatively well run sea port under a government corporation which acts as “landlord” to private sector wharf-side service providers¹⁸. The port has good ship connections and turnaround time is relatively fast. The country is well-served by container ships operating international routes.

Geographical compactness of the Samoan islands and relative good road and domestic shipping network has facilitated farm-gate collection and delivery of nonu raw materials to processors. The satisfactory status of Samoa’s infrastructure is considered to be one of the factors that have contributed to the success of the nonu industry development to date.

Fiji’s horticultural produce exporters have direct air links to Sydney, Melbourne, Auckland, Los Angeles, Hong Kong, and Seoul. The international airport at Nadi is the Pacific hub for international flights and has offered a unique advantage for Fiji’s HTFA treated produce to access Pacific Rim markets. The main growers providing products destined for HTFA treatment are located in areas with adequate road connection to the treatment facility at Nadi Airport. Furthermore, the positive impact of the telecommunications revolution means that throughout much of Fiji, growers, buyers and transport providers are now benefiting from instant communications.

The Tonga study reports that road transport has been greatly improved through Government development programmes (financed largely by aid funds) and that most farms are accessible. Wharves are also in good standard for the major islands, especially in Vava’u and Tongatapu where exports are possible by sea. Airports are also well developed for air transport in all major islands. However, post harvest infrastructure is not as well developed and is now the priority for

¹⁸ Samoa Port Authority provides pilotage, dredging, and security (to standards set by the International Maritime Organisation) and leases port infrastructure to private operators, who provide superstructure (e.g., forklifts) and whose service provision is regulated by the Authority. Private companies currently provide stevedoring, container handling, and major maintenance.

investment to facilitate commercial agriculture. The upgrades are anticipated to include the quarantine office, fumigation chamber and facilities; blast freezing, cooling, packaging and labelling facilities; renovations and upgrading of central market and ice-making machines; and slipway improvement to fisheries wharf in Vava'u.

The infrastructure situation, particularly for the rural areas, is less well developed in Solomon Islands and Vanuatu. In Solomon Islands for example, it is estimated that 80% of the national road network is not maintained and is out of service as a result, and that 68% of villages have no road access at all due to historic underinvestment (ADB, 2008). A significant problem for the floriculture industry in Solomon Islands is transport infrastructure and the cost of transport. Public transport, buses, taxis, inter-island ships, canoes and very occasionally small aircraft are used to transport produce to Honiara markets. Appropriate packaging for these, often lengthy and difficult journeys, is seen as a high priority need to help preserve the quality of the produce reaching markets. Furthermore, key factors that are considered as inhibiting possible flower exports are limited airline capacity and non-existence of cool storage to ensure post-harvest preservation.

Poor infrastructure for transport and communications has also been highlighted in the Vanuatu report as a factor limiting commercial development of smallholder agriculture. The VOCCA model involves the collection of dried bean from central cooperative processing facilities. Thus it can only operate in locations where there is reasonable road access. Poor transportation infrastructure on Malekula Island limits VOCCA outreach and substantially increases the cost of doing business. Plans to upgrade the Malekula road system by constructing more feeder roads if implemented would greatly reduce the marketing cost of existing cocoa and hopefully lead to expanded cocoa plantings. On the positive side VOCCA with support from KAOKA have provided trucks to transport cocoa from fermentaries to storage facilities, and initial infrastructure support from development projects have been acknowledged as important success factors.

Up until recently telecommunications posed a major constraint to the efficient operation of agribusiness in Vanuatu that depends on sourcing and collecting product from widely dispersed rural communities. But new entrants in the mobile phone sector have caused a dramatic change with an explosion of mobile phone use in rural Vanuatu. All the VOCCA and Cooperative board members interviewed by the study team had a mobile phone as did many of the farmers. The current network coverage on Malekula extends to most, but not yet all, the VOCCA processing sites. Most of the Malo island sites also have mobile phone coverage. Basnett and Brien (2009) concluded that the advent of competition in Vanuatu's telecommunications sector is "affecting the value chains of small businesses by reducing the cost of doing business (incremental

benefits) and expanding business opportunities (transformation benefits)” (p, 55). The Vanuatu study reports that both benefits have clearly applied to VOCCA.

KEY LESSONS

To promote successful commercial agriculture development inclusive of smallholder farmers the top three priorities for investment are infrastructure, infrastructure and infrastructure!

Improved telecommunications through increased competition in the mobile phone sector is bringing substantial benefits for smallholder farmers’ commercial operations in four of the case study countries. The Solomon Islands is the only country not to have joined the telecommunications revolution. This is the result of the government’s ongoing support for a monopoly provider and as a consequence benefits for agricultural growth have not accrued.

A precondition for the export of horticultural crops is the availability of regular airfreight schedules; fresh vegetables and cut flowers depend on adequate cargo space to international markets. Unless quantities are large enough to justify chartering planes, the exporters will be dependent on space being available on commercial flights. In this regard, the entrance of low-cost carriers (e.g. Virgin Blue and Polynesian Blue) in the region coupled with developing tourism sectors has seen a significant increase in frequency of commercial flight connections, but unfortunately these airline tend not to use wide body aircraft which carry containers.

The responsibilities for the provision, ownership and management of infrastructure require careful consideration. The studies illustrate that whilst providing or building facilities for activities such as processing, packaging and quarantine may be a responsibility for the public sector, where government has remained active in their management, sector development has been less successful. The issue of transfer of ownership and management is discussed further in the following section on Public-Private Partnerships.

Similar considerations are required in determining who should provide the financing and/or provision of support services such as research and development, extension and promotion. Research, development and extension activities, particularly where aimed at the development of smallholder agriculture and the early stages of commercialisation are difficult for the private sector to provide. A key factor in the widespread planting of suitable cocoa varieties in Vanuatu was the supply of planting material by the Department of Agriculture. Extension advice was supported under donor funded programmes.

Government support to product promotion has been relatively limited across the case studies, and has tended to be confined to supporting participation in trade fairs (for example, nonu in Samoa). But product promotion is increasingly an

important aspect of gaining market share and an area where public sector support could be valuable to enhance success. A good example of more broadly defined public sector support (included activities of donors and civil society) to promotion is the case of Samoa's organic virgin coconut oil. Led by a local NGO (Women in Business Development Incorporated) and supported by donors, successful promotion of this product has led to a valuable market opportunity with the international company Body Shop.

PUBLIC-PRIVATE PARTNERSHIPS

In the early stages of commercialisation, and particularly where an objective is to increase smallholder (perhaps remote from key markets) participation, infrastructure is unlikely to be a viable investment for private sector actors.

However, in more established chains, the facilitation of investment by private sector operators to overcome critical infrastructural constraints to VCD may be an appropriate option.

Appropriate Public-Private Partnerships (PPP)¹⁹ have been critical to the development of NWC²⁰ and VOCCA and thus have significantly contributed to the success of the horticulture export industry in Fiji and the organic cocoa sector in Vanuatu.

Experience from the Fiji study indicates that successful quarantine treatment in the Pacific Islands requires a public private sector partnership. Similarly, the Tongan study suggests that past experience of government management of government established facilities has not been successful (for example, desiccated coconut in the 1970s, the HTFA in the 1990s).

The public sector cannot be successful on its own nor can the private sector. However, appropriately working together success can be achieved. The role and contribution of the two parties in the NWC PPP provide a good example:

The public sector:

- Facilitated the initial transfer of specialised technology to the fruit and vegetable export industry.
- Provided start-up capital (equipment, building, land and some working capital) and contributed to expansion capital
- Facilitated (although less well) the timely negotiation of bilateral quarantine agreements that opens up markets for the business.

¹⁹ Public-private partnership here means working together towards common goals and sharing the risks, responsibilities, resources, competences and rewards

²⁰ Under the Cooperative Act in Fiji, new cooperatives are entitled to a seven year tax holiday. This entitlement undoubtedly assisted in the establishment of the NWC, highlighting the importance of supportive legislation.

The private sector:

- Owns and operates the facility on behalf of the fruit and vegetable export industry.
- Provided a significant contribution to start-up working capital by taking shares in the business.
- Generated retained earnings to maintain the business and to invest in future expansion

NWC management has been particularly skilful in securing external capital funding and technical assistance to support the development of the Fiji fruit and vegetable export industry. This development support has played a catalytic role in growing the export business with associated accrued benefits to famers.

The genesis of VOCCA was a visit to Vanuatu in 1989 by the CEO of the French organic chocolate manufacturer KAOKO. Following this visit a proposal was prepared to establish a producer organisation project which would facilitate the development of a certified organic cocoa production base. The French government agreed to fund such a project which resulted in the Vanuatu Organic Cocoa Growers Association.

In Samoa, the nonu industry has not been so successful to date in attracting public support. However, with an increasingly competitive global market for nonu products appropriate public support could be vital to the continued survival of the industry, for example in upgrading the capacity to dry fruit.

In Tonga, public support for post harvest management and packaging is being contemplated and therefore it will be important that an appropriate partnership is established which leaves the private sector firmly in the driving seat.

KEY LESSONS

External support can be vital to agribusiness development in the region, but leveraging this support requires special skills which are not readily available to all developing industries. A more proactive role of development partners is desirable. A good example has been set by the Facilitating Agriculture Commodity Trade (FACT)²¹ project implemented by the Secretariat of the Pacific Commission (SPC).

Public support should be coordinated, properly sequenced and targeted.

²¹ FACT is an EU funded pilot project – 4 million Euros over 5 years (2008-2012). The project aims to facilitate agricultural and forestry exports by picking winners. It identifies and helps remove impediments in the commodity chain: -capacity building; certification; equipment; market research; business planning etc.

CONSTRAINTS

Whilst the key success factors identified by the five country case studies have been rather consistent across the different enterprises, many of the main constraints have been more country and sector specific. These constraints are detailed in the country reports and some have been highlighted above when discussing success factors²², therefore only a few priority issues are discussed here.

Quarantine is a mandatory responsibility of government and continues to be a weak link in the export marketing chain for fresh produce. Government's ability to negotiate in a timely way protocols for export products remains wanting. As a result the private sector (Natures Way Cooperative) in Fiji is now taking a leading role in facilitating market access for new horticultural products to the USA market.

Equally, value chain development in Pacific Island Countries can be threatened where inadequate quarantine arrangements are in place. For example, weak implementation of existing measures could result in the introduction of pests or diseases damaging prospects for development of the horticulture industry in Fiji, nonu growing in Samoa, the Solomon Island's floriculture sector, root crop production in Tonga and cocoa in Vanuatu.

A **lack of up to date quality data** pervades most of the sectors under study, along the value chain from input markets, production activities (particularly in subsistence production) to domestic and overseas markets. The Solomon Islands study could justifiably be cited as the only source of data on flower production in that country. The paucity of information affects all chain stakeholders - it increases the difficulty of identifying the critical constraints to sector development and the potential impacts of interventions intended to overcome those constraints; it makes investment decisions by private sector actors, notably processors and exporters, but also smallholders problematic.

Credit availability is restricted by a lack of information on the risks faced by lenders and availability of suitable assets to provide as collateral. Although the demand for credit differs across the case studies, in terms of both the requirements and levels in the chain, in most cases, farmers who are currently only using relatively low input levels with limited technology were not deemed to be the primary demanders.

²² For example, as mentioned above under infrastructure, the high transaction costs and difficult physical access to markets continue to be important constraints for the commercialisation of smallholder farms, especially for those in remote areas.

Rather, it is the intermediaries/ traders (wholesalers, exporters, processors) who needed finance (i) to make investment in infrastructure for upgrading their processes (plant, storage facilities, transport etc.) and (ii) for cash-flow because smallholders generally demand cash on delivery for their products.

For these actors this raises the question as to what they can offer in terms of collateral to banks. In the Solomon Islands, borrowers must provide 100% equity and still face an interest rate of 18%, making even relatively small investments in improved packaging and storage facilities problematic. In Samoa, where the terms appear somewhat more favourable for processors with an 11-13% commercial interest rate, these actors are still finding it difficult to invest in upgrading drying technology.

In the Fiji study, a distinction is made between start-up capital (where the public sector was able to assist) and working capital. In the initial phases of enterprise development, where throughput may be relatively low it proved difficult to set user fees at a level sufficient to cover costs. Initial fees of 40c per kilo were only 50% of the estimated treatment cost of 80c per kilo.

Credit availability is often linked to providing land title as secure collateral. However, in these case studies, with the exception of Fiji, most small farmers' have been producing on land under traditional communal tenure systems and access to land has not proved to be an issue. Furthermore most smallholders are using low input systems and family labour, which have not been dependent on external finance. Therefore the oft held view that there is a need for land tenure changes based on the argument that farmers need to use their land as collateral may be tenuous for smallholder semi-subsistence farmers. In Tonga a secure lease title has allowed farmers to raise development finance from banks, particularly during the squash boom. But this also raises the issue of the risks associated with using land as collateral for agriculture projects as several leases were lost in Tonga when projects failed.

As chains upgrade and small farmers require more in terms of inputs and equipment alternative routes to securing adequate finance, such as through contract farming with buyers higher in the chain who then provide the necessary finance or inputs based on contracts for farm products (the KAOKA /VOCGA model) may more be appropriate.

Inappropriate government intervention can create considerable uncertainty. Although some of the case studies demonstrate an important role for the public sector in establishing the basic conditions and in leveraging private sector participation in kick starting processes of chain development, other studies highlight the significant risks when the public sector remains inappropriately engaged, particularly in marketing activities.

For example, in Vanuatu, the cocoa sector development was constrained for two decades by the active involvement of the Vanuatu Commodity Marketing Board (VCMB) which acted as a marketing monopoly and constrained the ability of the sector to take advantage of the price premiums available for organic and single origin cocoa. Deregulation removed some of the constraints, but with the continued existence of the Board (albeit with an inactive role) the threat remains that it could again become active in marketing activities. This threat may be enough to reduce levels of investment in the sector.

In the Tongan study, it is suggested that the MAFFF may become involved in the construction and management of processing and packaging facilities. A key task will be to determine when management transfer to the private sector should take place.

Risks are significant in agricultural value chains by virtue of their susceptibility to climatic variation and volatile markets. Whilst such risks may be mitigated, the studies highlight a range of other sources of risk which may hold back value chain development. These include predatory buyers (as in the case of cocoa in Vanuatu and horticultural products in Fiji); loss of consumer confidence in the product because there is little evidence to support claimed benefits (as in the case of nonu in Samoa); unfair competition due the use of “unpaid for” inputs (for example by part-time florists in the Solomon Islands), importers returning less than received prices (some buyers of Tongan root crops). Many such risks arise as a result of asymmetric information and could be alleviated with better availability of more transparent information and improved contract arrangements.

Further risks are associated with the *ease of exit* of certain chain actors. Smallholders using basic technologies and marketing only part of their production under spot market transactions may shift easily out of a given product if the returns relative to alternatives fall. This can create difficulties for processors investing in new capacity. The NWC works on the basis of compulsory membership of exporters which alleviates this threat to a certain extent. On the other hand, the horticultural export industry in Fiji is reliant upon the successful operation of the HTFA and organic cocoa growers in Vanuatu currently rely on KAOKA’s continued commitment to the sector.

The small scale (and associated poor functionality) of domestic markets has constrained development in a number of sectors. In the Solomon Islands, the market price is deemed too high, in part a result of a lack of competition to provide offsetting pressure to inaccurate cost-plus pricing. In Tonga, root crop prices are relatively high, with upward pressure as the rate of urbanisation increases, and concern that volumes for export may not be available if returns on domestic markets are perceived to be greater. In contrast, limited domestic

markets (e.g. nonu in Samoa) provide little buffer to downside volatility on export markets.

Finally, there is increasing incidence of *theft* of agricultural products in a number of the case study countries. This creates strong disincentive to move into commercial agriculture, particularly the production of high value to weight, easily harvested products (e.g. horticulture)

POTENTIAL FOR SCALE-UP AND REPLICATION

Indications from all studies are that there is both latent production potential and demand (whether domestic and/or overseas²³), suggesting the potential for up-scaling in each of the studied sectors.

In the Fiji papaya case, NWC is seeking to run at capacity of 3000 tonnes per annum. The case is made that the potential export market for fresh horticultural product from Fiji may be closer to 10- 15,000 tonnes per annum. The study notes that NWC does not plan to add further treatment capacity. It argues that if moving to a higher level of capacity is viable, the incentive should be there for additional private sector investment in HTFA treatment facilities.

In the case of root crop exports from Tonga, there is an opportunity to export through established distributors, supermarkets and specialty retailers (formal) instead of relying on informal channels. Such a shift could result in higher and more stable returns, although indications are that the market may currently be relatively limited.

There are also lessons from the studies that may be replicable across the Pacific region. For example, the model by which the private and public sector worked together to provide quarantine facilities in Fiji, may be transferable to other countries currently running at sub-optimal levels under public sector management. Similarly, the cooperative structure of VOEGA, particularly its engagement of young people in its management, may also provide lessons that could be drawn upon in initiating similar structures for ensuring consistent supply of high quality product for niche markets.

In Solomon Islands, a growing awareness amongst the new flower entrepreneurs of the benefits of extension and of promotion, appear to have generated a level of demand at which chain stakeholders are willing to pay for such services. This might in fact also reflect that this sector has had no earlier experience of free, but often inferior, government extension provision.

²³ Note for nonu in Samoa overseas demand seems to be increasing for organic certified dried powder products but declining for juice.

However, the context specific nature of some aspects of the successes must also be recognised – the importance of individual champions, level of infrastructure development (e.g. Nadi airport for Fiji’s horticulture exports, Samoa’s compact geography and improved road infrastructure for farm-gate nonu collection), and the involvement of an “angel” investor (KAOKA) in Vanuatu.

A key message therefore, is to ensure that a thorough technical and economic feasibility study is undertaken before scaling-up or attempting replication of perceived value chain successes. In the case of some agricultural products (e.g. tree crops) prices tend to be cyclical. Therefore an analysis of economic viability carried out when prices are high would produce very different results than those obtained at the bottom of the price curve. A “sensitivity analysis” is thus required to ensure that production can be carried out profitably even when prices are low.

CONCLUSIONS

The discussion of success factors and constraints has largely been at a chain specific level, drawing out examples of factors that have contributed to the development of the different sectors and the constraints that have impeded further development.

In the concluding section, an attempt is made to develop this discussion to address the study objectives that were set out in the Introduction. These are addressed in turn.

GAIN A DEEPER UNDERSTANDING OF SMALLHOLDER COMMERCIALISATION AND ITS STRENGTHS AND WEAKNESSES IN CONTRIBUTING TO BROAD-BASED GROWTH.

The case studies highlight the importance of recognising that different pathways to smallholder commercialisation exist and that following these pathways will have different implications, not only for the stakeholders involved, but for the contribution that commercialisation can make to broad-based growth. A number of key aspects influencing the extent to which the processes of development observed in the different sectors are inclusive of smallholders, and in turn the degree to which the sector contributes to broader growth can be highlighted. These include:

(i) The level of market participation

As indicated under success factors, strong and sustained market pull is a critical incentive for smallholders to generate surplus production for market. The case studies provide examples of the sources of pull, including the enhancement of quarantine management and the deregulation of marketing. Without sustained market pull, episodes of rapid growth in production, followed by slumps have been common,

resulting in depressed incentives to smallholders to respond to new opportunities.

(ii) The market focus

Attention in most of the success stories (the exception being floriculture in the Solomon Islands) had been on export markets. However, the studies also allude to the importance of strong domestic markets, which can provide a buffer to export market volatility and by virtue of less exacting standards, an opportunity for more remote, more resource constrained producers to enter the market. In Tonga the domestic market for root crops is substantial and growing along with urbanisation, whilst in Fiji the tourism industry is expanding the market for horticultural products. An aspect that is currently understudied is the potential for intra-regional trade (particularly for example in fresh produce and root crops) to provide expanded market size.

(iii) Ease of entry

The ease with which smallholders can participate is determined in large part by the “fit” of a new market opportunity with the traditional farming system. This is important both in terms of the level of knowledge and ability to change farming practice, and in terms of the returns to effort, which often needs to be significant given the relatively high reservation wage rates. Barriers to entry can influence the degree to which different categories of smallholder producer can participate and include the level of infrastructural development, accessibility of markets, basic management skills etc.

The ease with which smallholders can exit a particular value chain is also important in influencing the sustainability of chain development. Where exit of producers is easy, incentives for investment in processing facilities can be depressed, and mechanisms for their continued involvement in supplying the chain may need to be designed. Contract farming may provide a suitable mechanism in certain situations.

(iv) Employment opportunities

The way in which the processes of value chain development impacts upon employment opportunities also influences the extent to which smallholder commercialisation contributes to wider growth. In the Fiji and Vanuatu cases, a significant employment opportunity for rural households appears to have been created. Positive contributions have also been observed in Solomon Islands and Samoan cases, although to a lesser extent. The picture is less clear in Tonga, where high agriculture

wage rates and the mechanisation of agriculture may have constrained opportunities.

STRENGTHEN UNDERSTANDING OF THE CONTEXT IN WHICH POLICY CHOICES HAVE TO BE MADE.

The comparative analysis of the different case studies highlights a number of context specific aspects that condition policy choice with respect to sector support.

Critical amongst these is the existing degree of commercialisation and the extent to which the focus of support needs to be on developing the basis conditions for smallholder commercialisation (e.g. improved transport and communications infrastructure), as opposed to facilitating sector take-off and sustained growth once those conditions are there through a focus on specific value chain organisation and efficiency.

HELP IDENTIFY INNOVATIVE WAYS TO LINK PUBLIC FUNDING WITH PRIVATE SECTOR RESOURCES.

Whilst funding for establishing the basic conditions for smallholder commercialisation is likely to remain a public sector (broadly defined) responsibility, the role of the public sector in the management of key chain specific infrastructure, in the provision of services to smallholders and in marketing activities needs to be supportive rather than “hands-on”.

The Fiji and Vanuatu studies provide examples of successful partnerships between the public and private sector in the provision of quarantine treatment and quality control. Establishment of the VOCCA with support from aid funded project was a critical step needed to establish a consistent supply of high quality cocoa bean.

However, in identifying ways to involve the private sector in the delivery of key supportive services the importance of recognising the different requirements and different characteristics of these services and associated investments needs to be highlighted.

Whilst contracting out services to private sector operators may work in some situations, the scale of operations and the level of development and competition in the private sector may make this problematic. Accompanying training of potential service providers is therefore critical in this respect. Particularly, there is a need to provide awareness and training in the application of marketing extension and farm management for advisory services and farmers.

In overcoming the economics of scale issues, particularly as they affect service provision, there is a potentially important role for farmer organisations and industry associations (as being demonstrated. By NWC, VOCCA and PINA)

The high degree of risk inherent in the agriculture sector also provides a rationale for public sector risk sharing in underwriting private sector investments.

PROVIDE SPECIFIC ADVICE TO GOVERNMENTS ON THE MOST APPROPRIATE INTERVENTIONS THEY COULD MAKE AND EQUIP DECISION MAKERS WITH KNOWLEDGE TO MAKE WISE CHOICES ABOUT WHERE, WHEN AND HOW TO INVEST.

In light of the above discussion, governments need to recognise and adapt their changing role in supporting smallholder commercialisation through value chain development.

In situations where infrastructure, both general and chain specific, and knowledge are limited, the public sector will have a strong role to play in developing the basic conditions for smallholder commercialisation. This role will require careful consideration in terms of the relative responsibilities for funding, construction (where required), ownership (and transfer if required) and management.

Where these conditions are adequate, but input and output markets are, by virtue of low throughput, susceptible to volatility and failure to deliver the required level of services, the public sector can play an important role in kick-starting sector development. The partnership with NWC in Fiji provides a case in point.

However, as the sector takes off, governments need to ensure that their actions are both supportive and coherent and avoid crowding out private sector investment and entrepreneurship. A primary role for the public sector will be in knowledge generation and information sharing.

It is hoped that these case studies have helped to provide a deeper and more quantitative understanding of the smallholder sector (including small agri-business) and its strengths and weaknesses in contributing to broad-based economic growth. The synthesis has highlighted the need for a more responsive relationship between government and the private sector and identified some ways how policy and public investment can best be configured to support robust but equitable private-sector led growth. It also suggests a need for more empirical studies and improved sector performance data and information.

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APPENDIX: SUMMARY OF CASE STUDIES

CASE STUDY 1: FRESH HORTICULTURAL PRODUCTS – FIJI



Natures Way Cooperative (Fiji) LTD.

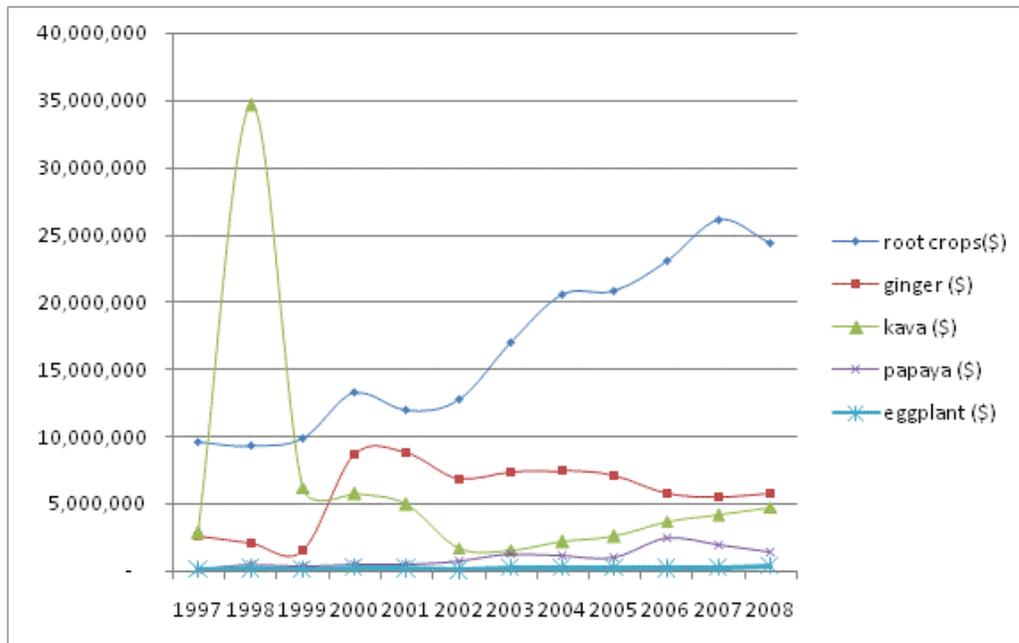
Sector Focus and Performance

Despite identified market opportunities, the Pacific island countries (PICs) have not been a part of the global horticulture revolution. Fiji is finally starting to prove an exception to the rule, with horticultural exports becoming a lead growth sector. This coincides with the demise of the Fiji sugar industry and where the diversification of export and rural livelihood opportunities is urgently required if a major calamity is to be avoided.

An industry owned business, Natures Way Cooperative (Fiji) Ltd, the focus of this case study, is playing a lead role in the development of this new growth export industry. NWC is a registered cooperative owned and operated by the Fiji fresh produce export industry. NWC's core business is the quarantine treatment of fruit fly host products. Over the last decade NWC has grown from a small business handling just 30 tonnes of papaya to an agribusiness treating 1,200 tonnes fruit (papaya, mango, eggplant and breadfruit) annually for export. Currently NWC annually generates around FJD 2million in export earnings and FJD 800,000 in farmer income. Because of the capital investment made by NWC a threefold increase in export earnings and farmer income is now feasible.

Horticulture is an entirely smallholder-based sub-sector which includes ginger, tropical fruit, root crops and vegetables. Export horticulture is now, after years of disappointment, the fastest growing part of Fiji's agriculture sector. This sub-sector is dominated by root crops (taro, cassava, ginger and kava), the total export value of which reached FJD38million in 2004. The value of these exports is plotted in Figure 1.

Figure 1: the value of Fiji horticulture exports, 1997 to 2008 (FJD)

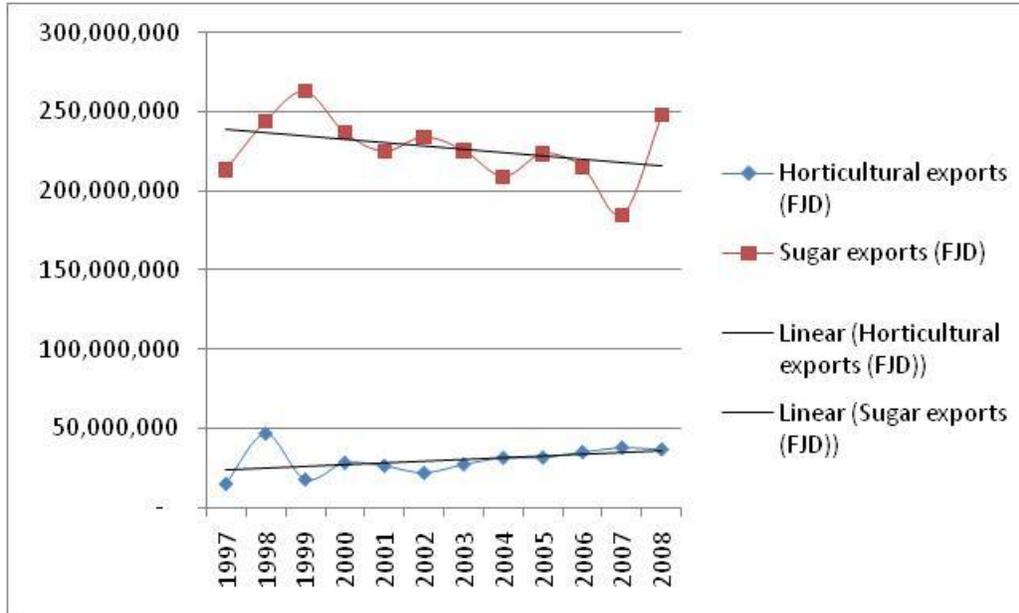


Source: The Fiji Island Bureau of Statistics

Tropical fruit, particularly papaya, is showing considerable promise and is the focus of this study. However Figure 2 starkly shows the chasm that still needs to be filled between declining sugar earnings and increasing horticultural export earnings. In 1998 there was a degree of euphoria in some quarters that the illusive replacement for sugar had been found, when kava export earnings jumped from FJD 3 million

in 1997 to FJD 35 million in 2008. The kava boom was short lived, with the value exports plummeting to less than FJD 2 million over the next few years.

Figure 2: A comparison of Fiji’s horticulture and sugar exports 1997 to 2008 (FJD)



The continued growth in niche horticultural exports has confirmed the competitive advantage in this area of Fiji’s agriculture, albeit nowhere near sufficient to offset the accelerating demise of the sugar industry. The value of sugar and molasses exports in 2008 was FJD262 million. The next biggest agricultural export in that year was root crops valued at FJD26 million.

Success Factors (horticulture product exports)

Fiji has important inherent advantages in the production of certain high value products that are in demand. Some of the factors upon which these market niches have been based include:

- ✓ Isolation has meant relative freedom from major pest and diseases. This enviable quarantine status has given access to some markets from which competitors are excluded or restricted - e.g. Fiji papaya to Japan.
- ✓ Strategically located in the southern hemisphere. This gives an opportunity to be an off-season supplier for a range of horticultural products. Examples of seasonal opportunities that have been exploited are: fresh ginger to North America, mango to Japan, and eggplant to New Zealand.
- ✓ Direct transportation linkages to major Pacific Rim markets. Fiji’s produce exporters have direct air links to Sydney, Melbourne, Auckland, Los Angeles, Tokyo, and Seoul. New Zealand, Australia, and West Coast North American markets are well served by frequent and competitive shipping services. A subset of these large and affluent urban markets is around 1 million loyal Pacific Islander consumers.
- ✓ A commercial industry owned and operated quarantine facility. The operation of Nature’s Way Cooperative (Fiji) Ltd is the focus of this case study.
- ✓ Linkages with tourism. Hawaii provides a model here. The development of Hawaii’s large papaya and floriculture export industries was a direct bi-product of the outward freight capacity at reasonable cost created by tourist arrivals into Hawaii. Tourism offers Fiji’s diversified agriculture industry similar opportunities for flowers and value added packaged products such as spices.

✓ Environmental and health concerns of the market place

Fiji has a number of distinct advantages in developing significant certified organic²⁴ industries:

- * General market perception of Fiji as an unpolluted and relatively unspoiled environment.
- * An opportunity to build on, and market, existing traditional and sustainable organic production systems.
- * High demand for products that it is technically feasible to produce organically in Fiji (sugar, cocoa, fresh and processed fruits, coconut products and spices).
- * Locally available resources to provide sufficient nutrients to organically produce quality products
- * A non chemical quarantine treatment that allows the export of organic fresh fruit.

Nature's Way Cooperative (NWC) was established in 1995 to own and operate the new quarantine treatment facility on behalf of Fiji's fruit growers and exporters. The requirement of USAID, who provided the technology and the equipment, was that the quarantine treatment facility be operated by the private sector (the industry).

Prior to the establishment of NWC, quarantine treatment throughout the Pacific islands was undertaken by government quarantine departments. These were chemical treatments such as ethyl dibromide (EDB) and methyl bromide and were usually provided free of charge or at highly subsidised rates. The concept that quarantine treatment would be undertaken by the industry itself was a major departure from this institutionalised norm.

There were two alternative business models available for the new industry owned and managed quarantine treatment business:

- A registered Cooperative governed by the Cooperative Act, or;
- A limited liability company governed by the Companies Act.

Under both options, those who used the service (the exporters and farmers) would be the shareholders. The cooperative option was selected and Nature's Way Cooperative (Fiji) Ltd was registered in August 1995.

Success Factors (NWC)

- ✓ The quality and continuity of management.
- ✓ There has been no government interference in the operations of the business.
- ✓ An appropriate public private sector partnership.
- ✓ Shareholders have not interfered in the day to day operations.
- ✓ Quarantine treatment fees have been set at an economic rate from the outset - enabling the business to meet operating costs, fund repairs and maintenance, invest in expansion and make "rainy day" provisions for events such as cyclones and trade bans.
- ✓ The business was able to quickly move to a level of plant utilisation that yielded to a positive cash flow. The key to this was the introduction of eggplant in 1998 to complement and then surpass papaya.
- ✓ The ability to implement a succession plan to ensure the sustainability of operations

Successful quarantine treatment in the Pacific Islands requires a public private sector partnership (PPP). The public sector cannot be successful on its own nor can the private sector. However, through

²⁴ Products grown in a sustainable manner without artificial chemicals.

appropriately collaboration, success can be achieved. The appropriate role and contribution of the two parties in the PPP are:

The public sector:

- Facilitates the initial transfer of specialised technology to the fruit and vegetable export industry.
- Provides start-up capital (equipment, building, land and some working capital) and contributions toward expansion projects in the form of capital.
- Facilitates the timely negotiation of bilateral quarantine agreements (BQAs) that open up markets for the business.

The private sector:

- Owns and operates the facility on behalf of the fruit and vegetable export industry.
- Provides a significant contribution for the start-up and working capital by taking shares in the business.
- Generates the retained earnings to maintain the business and to invest in future expansion.

Operating as a formal registered cooperative has served the quarantine treatment business reasonably well in its 13 years of operation. There have been two major benefits to this structure:

- Under Fiji Cooperative Act, a new cooperative is entitled to a 7 year tax holiday.
- There has been a steady increase in exporter members of NWC. A principle objective of the cooperative is to expand its membership. This would not necessarily be the case for a limited liability company providing services.

However, there have been a number of short comings and problems arising from NWC being a cooperative.

- A generally negative perception of cooperatives.
- Inadequate administrative support provided by the Department of Cooperatives.
- Under capitalization.
- The risk of unjustified change of management.

NWC has grown from a small service cooperative to a mature agribusiness whose turnover will soon exceed a million dollars annually. The longer term sustainability of the business depends on being able to:

- maintain a high level of retained earnings;
- to attract more equity investment on the part of its shareholders;
- maintain high quality management that make decisions that are in the long term interest of the industry; and,
- having an effective credit control system in place for the recovery of debtor payments

The first three of these objectives would be more likely to be achieved if NWC was a limited liability company, under the Companies Act, with the exporters and farmers as shareholders,

Constraints

NWC has proven itself to be a financially viable operation. However, it would not have been possible to get established and to expand without donor assistance. Borrowing from commercial banks proved not a viable option. Fortunately, NWC has been able to lever donor and other assistance to meet these additional investment requirements. NWC has been successful in securing external capital funding because it has demonstrated its willingness to make a substantial contribution of its own retained earnings to expand the business.

The unit cost of quarantine treatment is in large measure determined by treatment throughput. The nature of the business is that from time to time there will be sharp declines in throughput due to factors that are outside the control of NWC. Examples are natural disasters, political disturbances and the discovery of an exotic new fruit fly. A quarantine treatment business in Fiji requires considerable reserves to be able to ride out such an eventuality and remain financially solvent. With the inevitability of climate change the frequency of severe floods and cyclones is likely to increase.

The aftermath of the coup of 2000 saw a disruption to production, interruptions to power supply, and closure of markets. As result only 290 tonnes of fruit were treated in 2000 compared with 370 tonnes the previous year. As a consequence the cost of treatment rose from 41 to 60 cents per kg resulting in a treatment gross margin of minus 20c/kg (the business lost 20c/kg for every kg treated). In that financial year NWC incurred a net operation loss of around FJD38, 000. Fortunately, the company had sufficient reserves in place to see it through until the next year when throughput increased strongly to 475 tonnes and the unit cost of treatment fell to 25.31 c/kg.

Prior to the severe floods of January 2009, NWC has been most fortunate not to have endured a major natural disaster since its inception. The last major disaster to affect wide areas of western Viti Levu was Cyclone Kina in 1992. Looking at the historical data a cyclone of Kina's "type" event could be expected every 5 to 6 years. Thus the floods of January 2009 were well and truly overdue. As consequence of the flood most treatments were completely suspended for the first 3 to 4 months. It will take up to a full year before throughput will return to normal levels. Thus without adequate reserves NWC would be facing financial crisis with continued operations depending on fickle government grants. Fortunately NWC put aside some FJD105, 000 in a fixed deposit to cover such a contingency.

A significant continuing constraint has been the lack of effectiveness in negotiation of bilateral quarantine agreements by the government quarantine services to allow timely expansion in the products that could be HTFA treated for export markets. NWC is now taking a lead on this to negotiate quarantine access for papaya and breadfruit to the USA market.

Opportunities for scale-up and replication

With the completion of the current capital investment programme NWC will theoretically have the capacity to treat around 3, 800 tonnes per annum. A realistic maximum capacity is likely to be more in the order of 3,000 tonnes per annum. With the Fiji fresh fruit and vegetable export industry starting to realise its potential, treatment requirements may in the not too distant future exceed this expanded capacity. However, NWC has decided not to make any more investments in treatment capacity. The argument was that if treatments exceeded 3,000 tonnes per annum, the larger exporters would have sufficient throughput to invest in their own treatment facilities.

The success of Nature's Way has created pressure to replicate the facility in two other locations – one in the remote northern island of Rotuma and the other on the Eastern side of the main island of Viti Levu.

Neither of these ventures has been subject to an economic feasibility study and it is highly unlikely that either could be commercially viable, with the throughput unlikely to justify the capital investment. This contrasts markedly to the situation at NWC, where the initial investment and subsequent expansion were subject to detailed feasibility studies.

The Cook Islands pioneered the adoption of HTFA technology amongst Pacific island Countries (PICs) with the export of papaya to New Zealand. Technical and financial assistance was provided by New Zealand. Fiji and Tonga established commercial HTFA units in the mid-1990s, with technical assistance provided by the United States Agency for International Development (USAID). These were followed by commercial units in Vanuatu and New Caledonia. To date only the Fiji unit has sufficient throughput to be commercially viable.

Conclusions

The key lessons from the various quarantine treatment operations in the region are:

- A necessary condition for the success of a commercial scale treatment facility is that it must be run by the private sector.
- The appropriate division of responsibility between the quarantine treatment business and the quarantine service.
- As with any other business success depends on good management
- Financial viability depends on maintaining a sufficient level of throughput.
- The business must be able to charge economic rates for treatment if it is to be sustainable.
- A place for public private sector partnerships

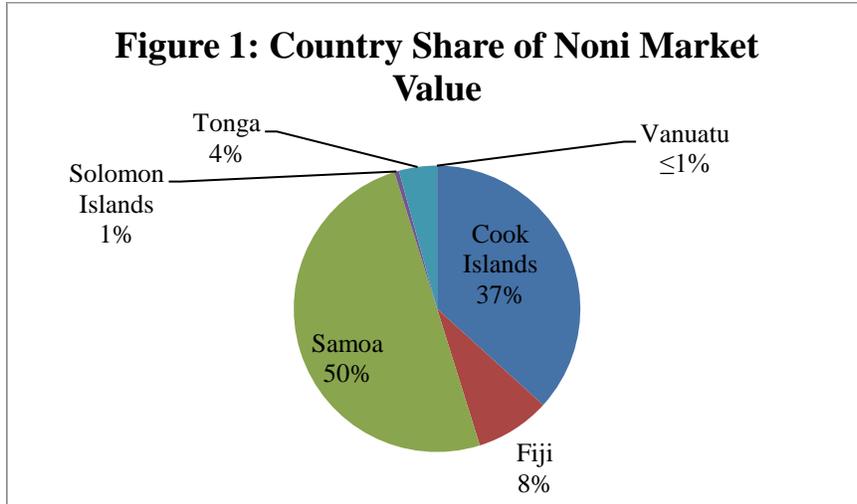
CASE STUDY 2: *MORINDA CITRIFOLIA* (NONU) - SAMOA



Nonu Fruit Washing & Grading in Samoa.

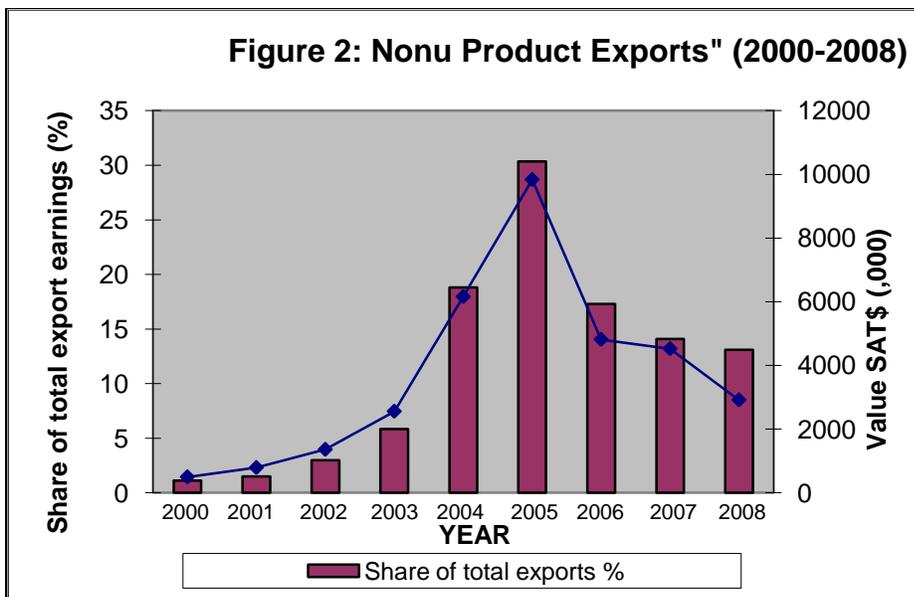
Sector Focus and Performance

Morinda citrifolia (nonu) grows extensively throughout the Pacific and is widely used as a traditional herbal medicine in almost all Pacific Island societies. In recent years nonu has become increasingly popular as a health food drink in developed countries around the world. Commercial production of *Morinda citrifolia* products in the Pacific began in the mid-1990s with a Utah, US-based Company, sourcing fruit juice from Tahiti. Attracted by the high prices being paid for *Morinda* products (particularly juice), several countries in the Pacific commenced their own commercial production and export, but overall Samoa has achieved the greatest success in terms of sustained export value and volume (Figure 1).



Source: Calculated from value of nonu exports 2002 -2007

Over the last decade nonu has contributed significantly to rural incomes and the economy and has been Samoa's major agricultural export since 2004.



Source: Compiled from Central Bank of Samoa data

The total value generated by the nonu value chain to the Samoan economy is estimated to be around SAT\$ 33.5 million (US\$ 13.4 million) and of this, the farmers' share of total value has been around 24% whilst the processors' share has been around 76%. In 2005, the peak year of production, approximately 3,800 tonnes of fruit was processed to export around 1.5 million litres of juice and 167 thousand kg of dried fruit products.

In the early years overseas demand for nonu products exceeded Samoa's capacity to produce since much of the raw materials were being supplied mainly by an existing stock of trees growing wild around the country. Production was stimulated through a national nonu day event and promotion of the crop led by the product processing industry. However, during the slump in export demand in 2008 much fruit was going to waste and several growers had cut down trees.

The nonu economic exchange system is market driven with international market demand and prices being the key drivers attracting and sustaining local agri-business participation in the value chain. The nonu market boom in the early 2000's led to Samoa's entry into the global market. However, initial comparative advantage based on widespread availability of nonu which grows prolifically in Samoa is now being eroded through increased competition from new entrants on the international market; therefore significant efforts will be needed to maintain competitiveness in a changing world market.

Success Factors

The key factors influencing the successful development of a nonu industry in Samoa which is inclusive of small farmers are:

- ✓ Initially, expanding world market demand for nonu juice fuelled by promotional campaigns led by Tahitian Noni International.
- ✓ Duty free access for Samoa nonu products to main export markets due to LDC status and/or preferential trade agreements.
- ✓ Market entry for processed nonu products not restricted through quarantine (SPS) issues.
- ✓ A cadre of experienced agri-business operators seeking new export opportunities following the demise of kava, copra and cocoa exports.
- ✓ Relatively simple technology required for processing fruit juice and dried products to add value, together with a willingness and ability of the entrepreneurs to invest in appropriate plant and procedures.
- ✓ A determined effort by these operators to achieve and maintain high product quality standards.
- ✓ Nonu trees grow widely and profusely in Samoa, being present on most farmland areas and in "backyards" and they fruit all year round with minimum pest and disease problems.
- ✓ Access to land for nonu cultivation is not a constraint.
- ✓ Nonu produces in a low input farming system requiring only family labour to collect fruit and limited management skills to sustain a yield.
- ✓ Farmers can include nonu in their traditional mixed farming system with minimum investment or risk.
- ✓ Flexible labour demands for cultivation/collection of nonu do not negatively impact on staple food crop production.
- ✓ Where necessary processors provided planting materials to expand production and provided guidance on fruit quality required for processing.
- ✓ Farm-gate collection of fruit organised by processors and spot cash payments provided easy market access to village farmers/collectors.
- ✓ Limited cash earning opportunities in rural areas stimulated and sustained an interest in growing/collecting nonu even when farm-gate prices dropped from initial highs.

- ✓ Geographical compactness of Samoan islands coupled with relatively good road and inter- island shipping facilitated transport of raw materials from farms to processing factories.
- ✓ Samoa has adequate international shipping links.
- ✓ General political and macroeconomic stability fostered a positive environment for business development.

Constraints

Under customary law there is a right for Samoans to use, cultivate, live and build dwellings on family lands provide they serve the *matai* (head of family, customary chief). But under the customary land tenure system, the allocation of property rights related to village and extended family lands is based on the understanding that the right of ‘use’ and of ‘ownership’ of land is separate. However, with the increasing importance of cash cropping, the tendency to allot portions of family lands to be worked by individuals or nuclear families has been greatly accentuated in Samoa. The change in tenure systems has proceeded to the point where the majority of village lands is now held by individuals rather than extended families, and is inherited directly by those individuals’ children, rather than indirectly through the acquisition of matai titles as in the traditional system.

This dramatic change in customary land tenure is considered significant for two reasons. First, it shows that Samoans are not rigid or bound by tradition. They can and do adapt to changing economic circumstance. Second, the security of land rights is increased under the modified system because it assigns tenure to the individuals who clear the land, and inheritance rights are assigned exclusively to their children. Thus, except where the modified system may come in conflict with the Land and Titles Court. Security of tenure is much greater under the modified system than it was under the traditional system. Because of this, security of tenure is not presently considered a significant cause of low productivity in village agriculture, as it may have been under the traditional tenure system²⁵. Indeed, experience has demonstrated that in the past when markets for agricultural products have been strong (e.g. banana, cocoa, taro, kava), issues related to land tenure and land access have not been a major constraint to smallholder participation in the market. Stakeholders in the nonu sector consulted in this study unanimously did not consider land access as a significant constraint to smallholder commercialisation or development of the nonu industry.

Generally, availability of labour has not been considered a constraint to agricultural production and commercialisation in Samoa, however various factors including, migration, remittances, seasonal overseas labour programmes, urbanisation, growth of rural tourism activities and social obligations (including subsistence food production) impinge on the opportunity cost of labour for commercial agriculture. Also, often missed in the focus on cash income generation are the many other types of work that result in village and family security and which build social capital for individuals and families. Whilst the minimum wage rate (currently SAT\$2.40/hr, approx US\$ 0.95) may be used in gross margin analysis, the actual opportunity cost of family/village labour to participate in commercial agriculture may be considerably higher. What appears clear is that high returns to effort are critical to encourage participation of semi-subsistence farmers in more commercial agriculture. Unfortunately, there is no data on either land or labour productivity for nonu in Samoa and hence no information on which to establish current returns to effort. In the early years of the nonu market growth processors are reported to have paid a farm gate cash price of SAT\$1 per kg for nonu fruit, whilst at market lows the price dropped to as little as SAT\$ 0.20 per kg; a price many farmers considered too low to justify effort.

²⁵ Tim O’Meara (1990). *Samoan Planters: tradition and economic development in Polynesia*. Holt, Rinehart and Winston, Inc., Orlando, FL 32887

Apart from in 2006 when there was a liquidity crunch in the banking system commercial credit has generally been available for productive business development, but at a high price (commercial interest rates have ranged from 11-13% during period 2004-2009). Nonu processors/exporters do use commercial bank credit (overdraft facilities) for their business operations. Some have also invested profits from early “boom” years into infrastructure development and to diversify their business activities. Nonu growers/collectors use low-input systems and their operations are not considered to have been constrained by lack of credit.

Public support for nonu industry development (government finance and donor funds) has been very limited to date. Some technical assistance has been provided to support product quality improvements (e.g. HACCP training) and some assistance has been provided for attendance at promotional events such as trade fairs. Processors have indicated constraints in financing capital improvements in plant (for pasteurising juice) and for better drying technology. Some processors indicated difficulties when dealing with applications for donor finance.

Supply and sharing of Information is possibly one of the weakest areas in the development of the nonu industry. There is little information available to farmers on tree management and improved production technology, or on the gross margin and returns to effort under different management systems. Despite nonu having been Samoa’s largest agricultural export for several years it is not a priority crop for MAF.

No consolidated and up-to-date information is readily available on the world market. Lack of rigorous scientific evidence on claimed health benefits for nonu products poses a potential risk to sustained future market demand. Processors indicated that they rely largely on their own research for information on processing technology and markets. Pacific Island Noni Association (PINA) has provided support in this area, but some processors have commented on the high membership costs in return for limited services provided.

Duncan and Nakawai²⁶ suggest that - “communal systems, with their strong clan loyalties, present difficulties for the establishment of a market economy because markets depend heavily upon transactions between parties that do not know each other. The close clan ties on the one hand and the long-standing distrust of other groups on the other hand mean that there is little of the kind of trust (social capital) that is needed in a market economy”. This situation is apparent in the nonu supply chain where producers generally have a strong mistrust of processors and are critical of what they believe to be excessive profits made by them. In contrast, some processors have expressed views that producers expect high payment for little effort and that they do not understand market systems or appreciate processors high operational costs and risks.

In December 2004, through efforts of PINA and with development assistance from the ACP-EU Centre for the Development of Enterprise (CDE), 26 Pacific island nonu processing companies received approval to export nonu juice to the EU member states. However, despite the potential access to the EU, Samoan processors have to date failed to significantly penetrate this market. Improved market intelligence, linkages and promotion are key factors for market development. The relatively small nonu industry in Samoa does not have the resources and capacity for undertaking market intelligence studies to identify market potential and specific market opportunities, or for rigorous promotion of its products.

In Samoa the government is the major service provider to businesses with inputs in the ports, shipping, water, electricity and telecommunication. These activities are major cost centres in any business budget

²⁶ Ron Duncan and Haruo Nakagawa. (2006). “*Obstacles to Economic Growth in Six Pacific Island Countries*”, World Bank, Washington, DC.

and the government needs to work towards reducing costs of these core services to help maintain Samoa's international competitiveness and enable private sector growth.

Opportunity for Scale-up & Replication

Opportunity to scale up nonu production in Samoa is ultimately dependent on the international market demand and price. A more predictable (and possibly increased) demand might be established by stronger coordination in the supply chain through greater vertical integration. Exploring possibilities to establish supply contracts with global distributors is one avenue that could be explored.

Nonu grows extensively in most Pacific island countries and small nonu product export industries have established in several, but none²⁷ have rivalled Samoa's success. In the small countries of Cook Islands and Niue production has largely been in plantations integrated to processors/exporters. The level of vertical integration in the value chain will impact on the potential backward linkages to the rural economy. Generally, it is expected that factors affecting the competitiveness of PICs in international nonu trade would be similar to those discussed for Samoa.

Conclusions

Like most Pacific island countries, Samoa has a very small domestic market and needs to participate in international trade to generate growth based on agricultural productivity. Therefore, they must establish international market niches that will allow them to charge prices that will cover their high international trade costs. Nonu has offered such an opportunity and Samoa has seized it. The experience of nonu in Samoa demonstrates how beneficial high-value niche commodities can be for semi-subsistence village farmers.

However, with increasing global competition and a depressed market environment, Samoa needs to explore every avenue to increase its competitiveness and market share in the international nonu market. Nonu products generally enter a "luxury" health-food market with demanding requirements on quality and other environmental issues of production. These factors may be more important for consumer choice than simply price. There seems to be opportunity in Samoa to expand certified organic production of nonu and possibly link this with "fair trade" marketing.

Improving the organisation and efficiency of the supply chain will also be necessary. The private sector has been dynamic in developing the nonu industry and their sustained efforts and innovation will continue to be the critical factor for future success. In addition, a number of interventions are required by the government to help reverse the downward trend and stimulate the industry so as to regain export competitiveness. To that end, appropriate actions are needed to create a strong national nonu policy and a robust institutional framework, enhance the producers' technical expertise so as to improve productivity and quality and to support market development through assistance for market research and promotion.

²⁷ French Polynesian countries (notably Tahiti) and Hawaii are not included in this comparison.

CASE STUDY 3: FLORICULTURE - SOLOMON ISLANDS



Solomon Islands blooming flower industry: Honiara Market

Sector Focus and Performance

Floriculture as a commercial industry is relatively new to Solomon Islands and expansion has been quite rapid. Flowers grown for sale began in Honiara around 15 years ago. There were two imperatives. One was from producers who grew flowers for their calming and healing properties. Patients in the main hospital were the beneficiaries of this belief-in-action. The other was from some expatriates who purchased flowers for home beautification from producers close to Honiara. Production was quite ad hoc and sales were made on an irregular basis. Nevertheless, the making of floral arrangements for the likes of weddings, birthdays, and special events was growing in popularity. Makers of wreaths also became more professional with some attending training in floral art display in nearby Pacific countries. It is noted that the Solomon Islands Government provided assistance to some florists to attend floricultural-events in Fiji, New Zealand, and Vanuatu.

Today around 40 floriculture producers market through the Honiara Central Market on a regular basis. Around 500 households are involved with the regular production of flowers for commercial purposes. Honiara has around 20 part-time florists. Commercial trade in orchids from some of the more distant provinces into Honiara is beginning. As far as could be established, no Solomon Islanders depends on just the sale of flowers for their entire household income.

Given the unique aspects of suitability to smallholders and the newness of the commercialisation of the industry, it was decided to include flowers as part of the study of learning from experience. The study was based on extensive interviews as there has been little written on the industry and even fewer statistics collected. No one in government is tasked with assisting the industry.

Success Factors

- ✓ Key champions driving the process
- ✓ A national interest in flowers
- ✓ Small scale land holdings not having land access issues²⁸
- ✓ Production is low input requiring little capital
- ✓ Good local skills basis for production and display
- ✓ Very colourful heliconia, gingers and indigenous orchids in Solomon Islands
- ✓ Availability of techniques (& training) and genetic material from other countries
- ✓ Government support for dedicated market space in Honiara Central Market

Constraints

Smallholders becoming florist face a number of inhibitions to financial success:

- Lack of business skills
- Lack of marketing skills to find and secure new sales
- Access to credit and cash flow dislocation having to pay producers cash on delivery of product then waiting for the payment for the arrangement²⁹

²⁸ Under customary arrangements in some communities, it is usual for women to have the approval of men when using land. However, flower production can occur on the small plot of land that surrounds the household. Use of this land is the prerogative of the householder. In a number of the country's socio-linguistic groups, women have their own land beyond the household plot upon which they can grow whatever they choose.

²⁹ The government is probably the biggest buyer but it has a reputation for being a poor payer

- Access to affordable floral art display material
- High transport costs
- The continual input of new ideas in the presentation of floral arrangements.

Informal surveys of buyers at the Honiara Central Market and with some buyers of arrangements in Honiara, Kirakira, and Gizo have indicated that there is a very limited range of floricultural products available. Essentially, and with the exception of some seasonal plants, there is a very high degree of sameness in the products presented to the market. Buyers have said that they would buy more if there were more varieties available to be purchased. Greater diversification could be achieved by cross-pollination of local varieties as well as the importation of new varieties. However, any imports need to be accompanied by a stiffening of quarantine protocols. Concern has been expressed at the lack of consistency in the application of quarantine inspection procedures. These must be made uniform for all arrivals that bring in plant material.

Techniques to improve shelf life are also needed. The product that arrives at the Honiara Central Market is quite poor. Because of the size of the industry it is most unlikely that specialist transport or specialist cool storage facilities will become available in the near to medium term future. However, a start can be made by developing better methods of transport and packaging.

It has been argued that the high price of flowers at the Honiara Central Markets could be inhibiting the growth of the local industry. Convincing producers of the need to reduce their prices in order to increase their sales locally will be, as they say, a hard ask. To be successful it must be balanced with gains in other areas, especially in higher yields, that is, more blooms per stem, and/or more stems per plant.

Opportunity for Scale-up & Replication

The significant growth in the Fiji flower industry is attributed to local sales.³⁰ It is considered that this is the most appropriate route for industry in Solomon Islands to pursue in the short term.

The greatest market innovation that could occur for flowers in Solomon Islands is the development of a wholesaling outlet in Honiara. Such an outlet would make flowers available to florists on a 6-day week basis. The consensus is that whilst flower sales at the Market on a Saturday would decline, there would be an overall increase in the weekly volume of flowers sold.

There seems little prospects in the near future for the exports of cut flowers from Solomon Islands. This is stated whilst being fully conscious of the opinion of South Seas Orchids that the heliconia and gingers of Solomon Islands are particularly vibrant and would find a ready market in Australia.³¹ Further, Solomon Islands appear to have excellent orchids that would also meet a ready market in Australia as either a cut flower or as a whole plant.

Some of the reasons for the assessment of poor prospects are:

- Limited airline capacity.
- Non-existence of cool storage to ensure post-harvest preservation.
- CITES conditions surrounding the exporting of indigenous orchids.³²

³⁰ McGregor, A and Stice, K (2008). Developing the ornamentals industry in the Pacific: an opportunity for income generation. A report for ACIAR: HORT/2006/055

³¹ Pers.comms. Mr Don Burness, South Seas Orchids, Honiara, July 2009.

³² Pers.comm. Dr Dick Watling, Honiara, August 2009.

- The shape of the heliconia and gingers make them ideal places for insect and thus they would attract great quarantine attention in Australia. However, heliconia and gingers have not yet even begun the excruciatingly slow journey for quarantine acceptance into Australia.

Notwithstanding the above, the potential for the exporting of foliage should be explored.

Conclusions

The industry is unusual in that it has grown to its current size without input from government. This opens the prospect that future growth can also occur with minimum call upon government. The strong sales of three different floricultural books raises the prospect of the industry's willingness to pay for privately provided extension advice.

Of the three options for the industry's growth, that is, exports, servicing the tourism sector and domestic sales, the most likely one is the latter. For this to occur it is considered that prices must be lowered but with a commensurate increase in productivity.

The industry is aware of the need to provide variety in the colour and variety of flowers it offers for sale. This can only come from imported stock. At the same time there is the prospect of the exporting in the F2 hybrid form some of the country's orchids. This suggests that the government has a major role to play in quarantine protection and certification of the adherence to international CITES conventions.

CASE STUDY 4: ROOT CROPS (CASSAVA AND YAMS) - TONGA



Root & Tuber Crops in Tonga Market

Sector Focus and Performance

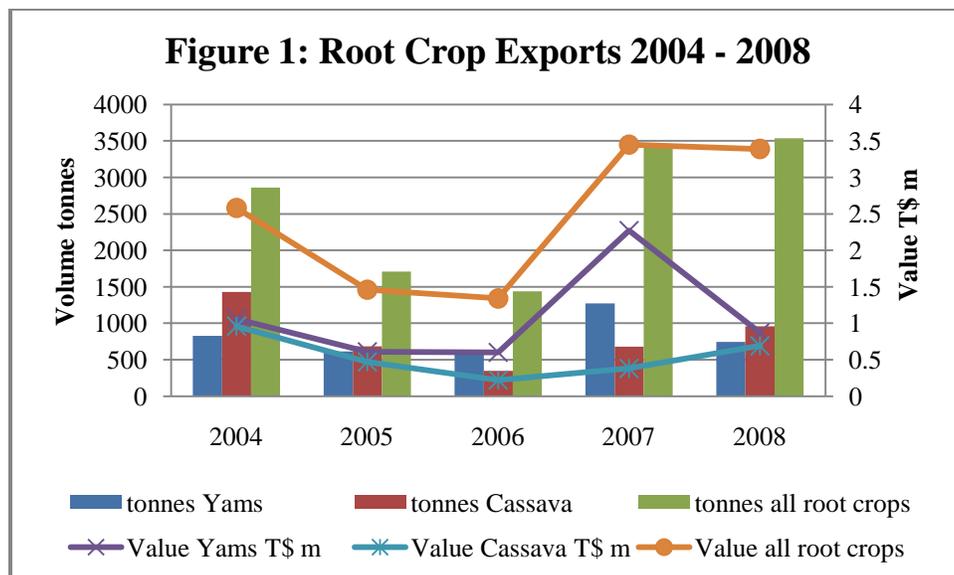
The root crops sub sector, in particular cassava (*Manihot esculenta*) and yams (*Dioscorea alata* and *D. rotunda*) enterprises was selected for this study. It is estimated (MAFFF 2008) that around 80-90 percent of farming households engage in some form of root crop production at any one time during the year, making it the most participated agricultural sub-sector in Tonga. The root crops industry was therefore investigated to determine its capability to accommodate increased economic opportunities for rural communities through increased production, increasing domestic and export marketing; leading to increased profitability, income and improved welfare of the general population.

Tonga is able to grow a wide range of root crops because of its fertile soils and favourable climate. The major commercial root crops grown in Tonga are:

- talotonga [swamp taro – *colocasia esculenta*];
- talofutuna [tarua taro- *xanthosoma*];
- kape [giant taro – *alocasia*];
- manioke [cassava – *manihot esculenta*];
- ‘ufi [yam – *discorea*];
- kumala [sweet potato – *ipumuea batatas*].

These root crops are grown across all of the islands of Tonga by subsistence and commercial farmers for direct consumption and for local sales, as well as for export. In addition, Irish potatoes are also grown by commercial farmers for local sales. The Agricultural Census 2001 reported 4,300 ha of root crops were harvested in the country during the year. Based on this data a conservative total root crops production is estimated to be more than 40,000 tons per annum. The annual total export of root crops is about 2,800 tons (7.5%) with the remainder for domestic consumption and stock feed.

Tonga currently exports substantial volumes of root crops in both fresh and frozen form. Over the five-year period from 2004 to 2008, Tonga exported an average of 2,729 tonnes of root crops each year (Figure: 1). While most root crops are exported fresh, cassava is exported in frozen form because of its very short (5-7 days) shelf-life after harvest. On average, over the 2004 to 2008 period, 845 tonnes of frozen cassava were exported from Tonga per year.



Source: Tonga Trade, MLCI (2009) and Quarantine Department. 2008 Annual Report

The leading exported root crop by volume is yam with an average of 1,014 tonnes each year (37% of all root crops), followed by cassava and tarua taro (31% and 15% of total root crops respectively).

Exported root crops of 3,533 tonnes in 2008 overtook squash exports for the first time to become the largest-volume export from Tonga. Almost all root crops are exported to informal markets in New Zealand, Australia, USA, American Samoa and Hawaii. Typically, a Tongan farmer will grow and ship root crops to family overseas that import and sell the product. Farmers also commonly form groups (through kava-clubs, churches or associations of ex-school students) and grow and ship to affiliated groups of Tongans overseas³³.

Demand for root crops exports is relatively high given the increasing numbers of Pacific Islanders living overseas. There is strong competition from countries such as Fiji and Japan but the Tongan products have managed to create a position and competitive advantage which should assure increasing demand in the future.

Success Factors

- ✓ A sustained strong domestic demand for local market sales and home consumption.
- ✓ An increasing export demand principally from ethnic (Tongan and other Pacific Island) communities in New Zealand, Australia and the USA (including American Samoa).
- ✓ Root crops are an integral component of traditional Tongan agricultural systems and necessary ingredient for ceremonial feasting.
- ✓ Appropriate varieties and planting material are generally available.
- ✓ Latent production potential exists³⁴.
- ✓ Potentially good financial return on effort.
- ✓ Good agronomic growing conditions³⁵ and generally available expertise and skills for growing traditional root crops in sustainable systems.
- ✓ Good opportunity for mechanised cultivation.
- ✓ Improved transport, storage and marketing infrastructure and marketing expertise resulting as a legacy of the recent squash industry boom³⁶.
- ✓ Regular shipping links (but high freight costs).
- ✓ A growing cadre of entrepreneurial farmer/exporters who are capable of negotiating and arranging export contracts.

³³ This summary has also drawn on information from a report prepared for the FAO Sub-regional Office for the Pacific by Pousima Afeaki (December 2009) on “Potential for Exports of Retail Packs of Frozen Root-Crops from Tonga to New Zealand –A Supply Chain Study”.

³⁴ The total projected root crop harvest from 3,000 acres at normal yields would be 17,000 tonnes compared with 3,533 tonnes exported in 2008 and with the current estimated annual supply of 6,330 tonnes for Tongatapu. If 3,000 acres of farmland was planted in root crops, there is potential to increase the total supply of root crops by nearly three times the current estimated total supply of Tongatapu (Pousima Afeaki 2009).

³⁵ Irrigation is necessary for optimum production of some root crops (particularly taros) during drier periods.

³⁶ The squash industry led to a massive increase in transport and storage facilities for farming in Tongatapu, ‘Eua and Vava’u. Squash exports have declined from the annual average of 15,000 tonnes to less than 2,000 tonnes. Most of the storage facilities for squash are now unused and are available for storage of other crops including root crops (Pousima Afeaki 2009).

- ✓ Mutual support from farmer groups.
- ✓ Competitive market conditions.

Constraints

Whilst domestic market demand is growing with increased urbanisation and development of roadside markets a number of factors currently constrain growth of the export sector. Export is currently more supply-led than demand-led. This means that exporters, especially individual exporters, send their goods overseas on the assumption that the market, Tongan and Pacific Island peoples, will buy their goods. This can lead to poor producer returns when markets are flooded and prices are low. Because no prearranged contract price has been agreed between producers and distributors this can lead to conflict and mistrust when returns to growers are low. Growth in exports should follow a demand lead with more formal contract arrangements with growers and exporters in Tonga. This will require improved information flows and upgrading supply chain management to maintain consistency in supply and quality including meeting import country regulations for food safety and labelling requirements.

Some of the key factors constraining growth in the sector are:

- Limited capacity for market research and promotion.
- Inconsistent quality standards control on root crop exports. Need to uniformly introduce HACCP systems and quality standards in line with CODEX
- Relatively high agricultural labour costs and low root crop productivity.
- Relatively high costs for agricultural finance (credit).
- Relatively high costs of agricultural inputs (principally agro-chemicals).
- Relatively high costs of packaging materials and delayed repayment of withheld Consumption Tax on imports of materials.

Land availability can be a constraint if the farmer has to lease. It may also be a problem depending on whose land the crops are grown. Farmers who farm land on noble estates are prone to lose some production towards increasing social demand from the estate holders. Whilst the ability to lease land is an advantage for Tongan farmers and does facilitate the participation of many growers that do not legally own land in agricultural production, problems have been encountered where land has been used as collateral for agricultural loans. During the height of the squash export industry many farmers could not repay their loans and were trapped for a number of years trying to repay the original loan plus additional loans on subsequent years.

Opportunity for Scale-up & Replication

More than half of Tonga's farmland is currently fallow. This is due to the lack of demand for crops which farmers can grow and make a profit from. Tonga has a comparative advantage for root crop production due to generally favourable agronomic conditions and good farmer growing skills. To improve market competitiveness better organisation and increased efficiency in the supply chain needs to be attained. Strong domestic market demand coupled with ethnic market connections in New Zealand, Australia and USA should ensure a sustainable industry into the future. Some opportunity exists to compete in Asian ethnic markets in New Zealand with frozen root crop packs; however, the current market for frozen retail packs is quite small, albeit growing³⁷.

Given the current relatively small size of the New Zealand market for frozen root crops, supply is not considered to be a problem for Tonga. The main island of Tongatapu will produce an estimated 6,330

³⁷ The formal market for frozen root crops is small in volume but appears to be growing - 78 tonnes in 2006 to 143 tonnes in 2008 (Pousima Afeaki 2009).

tonnes of root crops for human consumption in 2009. In 2008, Tonga exported 3,537 tonnes of root crops while New Zealand imported only 143 tonnes of frozen retail pack root crops, which equates to about 14 containers, or just over 1 container per month.

Additionally, processing capacity in Tonga to supply the small market is not likely to be a constraint. The facility in Tonga which is currently processing frozen retail pack root crops for export has the capacity to process 20 tonnes per week or 1,000 tonnes per year.

The potential for root crop (including Irish potato and carrots) exports to neighbouring countries such as Fiji and Samoa needs to be investigated further. Access barriers must be identified so that potential market opportunities can be fully exploited.

Conclusions

In Tonga, a large domestic staple food market coupled with the requirement for root crops at cultural/ ceremonial events, use for livestock feed, and a growing export market principally to ethnic groups in New Zealand, Australia and USA (including American Samoa) have provided a sustained market demand. Development of road-side market stalls and a cadre of unregulated root crop exporters (many of whom are also farmers) have facilitated market access for smallholder farmers.

The root crop export industry has been developed by farmers who have moved along the value chain to also become marketers and exporters. Open competition between marketers and exporters (i.e. licences are open to all) should promote healthy competition, but there still remains a need to better organise the production and export marketing chain. Standards, certification, branding and labelling are areas to be developed further as the industry progresses more towards the formal marketing channels. Promotion of cassava and yams in overseas destination may be an issue if more consumers, other than the traditional Tongans and Pacific Islanders, are targeted. This is especially applicable to the increasing Asian population in these destinations. The New Zealand market is a good 'test-market' for exports from Tonga. If Tonga can succeed in exporting and selling frozen retail-packs of root crops to discerning Asian consumers in New Zealand, then Tonga can then look further afield at markets in Australia and other countries.

Government support for on-farm research is needed to enhance productivity, especially on the appropriate chemical application rates that will sustain or increase yield as well as protecting the environment and the surrounding ecosystems. In terms of production farmers are confident of the availability of the factors of production (inputs) as well as support from the MAFFF and other sectors. Financial and physical infrastructures are in place to assist production. From a marketing point of view markets are available and accessible locally and for exports. New markets are being negotiated overseas. Potentials exist to increase market share and production, and prices can cover average variable costs of production, and therefore generate positive profits at the end.

CASE STUDY 5: ORGANIC COCOA – VANUATU

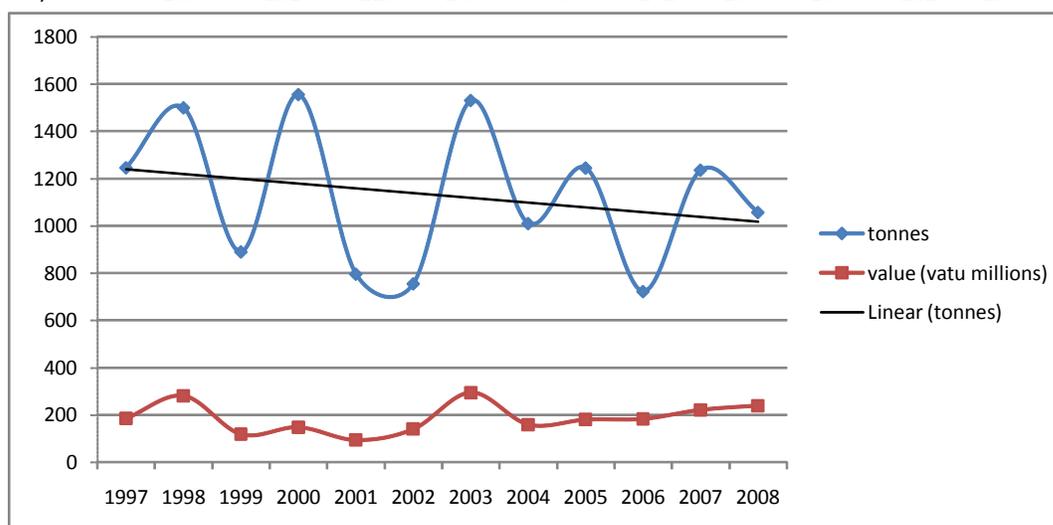


Vanuatu Organic Cocoa Grower Association Board of Directors.

Sector Focus and Performance

Vanuatu has one of the oldest cocoa industries in the South Pacific. Over the last decade, Vanuatu's production has oscillated around 1,000 to 1,200 tonnes. Cocoa exports, as with copra and coconut oil, have shown a downward trend. In 2008, Vanuatu exported 1,058 tonnes of cocoa, for a fob value of 240 million vatu. This represented 6% of Vanuatu's total export earnings, lying behind coconut products, beef and kava.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
tonnes	1247	1501	891	1557	797	756	1532	1011	1246	723	1237	1058
value (vatu millions)	185	281	119	149	95	141	295	160	181	184	222	240



A major advantage that cocoa offers smallholders is that it can be integrated into a food garden or grown under mature coconuts. Through the Vanuatu Organic Cocoa Growers Association (VOCGA) the returns from cocoa have been greatly increased while still remaining a component of the traditional farming systems. VOCGA operates as an umbrella apex marketing cooperative under which there are primary processing cooperatives that supply organically certified dry cocoa beans. Each primary cooperative operates one or more centralised fermentaries. VOCGA now has a total of 1,205 members. Exports of organic cocoa commenced 2006, with 400 tonnes shipped to France. The forecast exports for 2009 is 312 tonnes.

Table 1: Organic Cocoa Export Performance

Year	Tonnes Exported	Average world market price for year (NY price USD/tonne)	Estimated VOCGA fob price (vatu/tonne)	Estimated VOCGA export earnings (million vatu)
2006	400	1,610	201,000	83.2
2007	317	2,420	218,000	69.1
2008	210	2,510	225,000	47.2
2009	312 (forecast)	3,010	250,000	75.0

During two decades of monopoly cocoa marketing by the Vanuatu Commodity Marketing Board (VCMB) farmers were not able to take advantage of significant price premiums available for organic and

single origin cocoa. It is only now that these markets have become a realistic prospect. The VOCCA case study looks at how a Pacific island enterprise has taken advantage of these opportunities. Ni-Vanuatu cocoa growers, with their long tradition of fermentation are well placed to sell to secure markets at a premium price. In addition, there are niche market possibilities for single origin and organic cocoa. Good fermentation, adhering to high quality standards, is fundamental to accessing all these market options.

Single origin chocolate is made from cocoa beans sourced from an identified geographic region. Single origin chocolates are now becoming an important part of the European and American markets, which are willing to pay premium prices for quality beans that meet the required specifications. The French organic chocolate manufacture KAOKA is expected to launch Vanuatu single origin chocolate in 2010.

Within the Pacific region, only Vanuatu is taking advantage of certified organic cocoa markets. Pacific Island cocoa producers have a number of distinct advantages that should assist in the development of a certified organic cocoa sector. These include:

- A positive marketing image, based on a perception of relatively unpolluted and unspoilt environments
- Opportunities to utilise existing production systems
- High international demand for products that are technically feasible to produce organically
- A willingness from donors to provide technical assistance to support organic agriculture.

Success Factors

A number of key factors have contributed the success of VOCCA. These are:

- ✓ The deregulation of cocoa marketing.
- ✓ The proactive involvement of KAOKA in the establishment of VOCCA and in its continued operations.
- ✓ KAOKA-VOCCA's transparency in dealings with village smallholders.
- ✓ The initial infrastructure support provided by POP and POPACA Projects.
- ✓ Intensive involvement of high quality management.
- ✓ KAOKA-VOCCA's ability to manage cash flow to ensure that village farmers are paid cash on delivery for their wet cocoa bean.
- ✓ The ability to integrate complex internal control systems into traditional farming systems.
- ✓ The establishment from the outset of clearly defined and enforceable quality standards.
- ✓ The empowerment of village youth to serve in management positions with the full support of their elders.

Constraints

VOCCA faces a number of major constraints and challenges:

- **Organic drying techniques more suitable for Vanuatu's wet conditions.** VOCCA has been experimenting with sarlon cloth on bamboo racks and shade cloth, but further technical assistance in this area is required.

- **High overhead cost of office and storage space rental.** The association currently has to rent storage and office space in Lakatoro and Luganville, which is very expensive and significantly diminishes profit margins.
- **Insufficient supply.** KAOKA/VOCGA has made substantial investments in marketing infrastructure and organic compliance. To take full advantage of this investment there needs to be a substantial increase in exports. According to the VOCGA CEO there is a ready market for at least 800 tonnes of organic cocoa. The major challenge is for farmers to substantially increase their yields. There are opportunities to at least double yields with the introduction of management techniques based around improved pruning and integrated pest management techniques.
- **Maintaining organic discipline.** VOCGA has been introduced into a production system that was already essentially organic. However, maintaining the organic integrity of over 1,200 dispersed producers and 25 processing units presents a major ongoing challenge. The internal control systems that have been introduced have to date been successful in maintaining this integrity with no unsatisfactory residue levels recorded. Some cooperatives and a number of member plantations started using herbicides, which has led to their exclusion from VOCGA.

Rat control appears to be the only major ongoing problem in maintaining organic certification integrity. Some farmers have been tempted to use chemical baits and need to be repeatedly reminded that any chemical substance or residue will be traced back to them and will result in their deregistration as an organic supplier.

- **Poor infrastructure for transport and communications:** Poor transportation infrastructure on Malekula limits VOCGA outreach and substantially increases the cost of doing business. There are plans to upgrade the Malekula road system by constructing more feeder roads. This will greatly reduce the marketing cost of existing cocoa and hopefully lead to expanded cocoa plantings. Up until recently telecommunications posed a major constraint to the efficient operation of agribusiness that depends on sourcing and collecting product from widely dispersed rural communities. There has now been a dramatic change in this situation with entry of Digicel as a mobile phone provider. As a consequence there has been an explosion of mobile phone use in rural Vanuatu. All the VOCGA and Cooperative board members interviewed had a mobile phone as did many of the farmers. The current network coverage on Malekula extends to most, but not yet all, the VOCGA processing sights. Most of the Malo sights have mobile phone coverage.

The study team identified other constraints and threats, including:

- **Predatory buyers**

With the ending of the VCMB's direct involvement in cocoa marketing in 2003 there have been four entities involved in cocoa export marketing:

- The larger plantations (Metenesel and PRV)
- The Santo based Vanuatu Copra and Cocoa Exports (VCCE) now accounts for 60 % of Vanuatu's cocoa exports. The majority shareholder in VCCE is the Australian based Holland Commodities Ltd. Holland Commodities are also a main buyer of Solomon Islands cocoa.
- The Cocoa Growers Association (CGA), a product of POPACA, which purchases from non-organic cooperatives on Malekula and Ambae.
- VOCGA.

The presence of four buyers has had a positive impact on prices. However, these established exporters have tended to buy from growers in specific geographical areas with little direct interference with each other operations. The high prices on offer over the last few years have seen the entry of a number of small opportunist exporters who have made little or no investment in industry development. KAOKA/VOCGA has been exceptionally transparent in its dealing with member cooperatives and shareholders and has

invested considerable resources into developing a good relationship amongst suppliers. This seems to have created a high degree of supplier loyalty, particularly in the core production areas on Malekula. However, the predatory action of such buyers, fuelled by misinformation, poses an ongoing threat in situations where farmers have low relatively low levels of education and business experience.

- **The continued involvement of the VCMB in the industry**

For more than a decade ending in 2003 cocoa was a prescribed commodity that could only be exported by the VCMB. The VCMB monopoly severely constrained the development of the industry. In 2003 the VCMB withdrew from direct cocoa marketing with the deregulation of commodity marketing under the Comprehensive Reform Programme. However, the Board has continued in a “regulatory” role for prescribed commodities, which includes cocoa. The VCMB sees its new role as regulating and controlling the prescribed commodity industries through (i) the issue of export licenses; (ii) the control of quality; (iii) commodity data collection and dissemination; (iv) industry promotion through farmer support, and market development particularly of value added products. The operations are financed through commissions imposed on exporters prescribed commodities at the rate of: copra (US\$ 8 per tonne); kava (5% on the FOB price) and cocoa (6% on the FOB price). However, apart from the issuing of export licenses the VCMB performs none of its purported functions. The commissions charged by the VCMB are in effect an export “tax”. This tax is used to support the inefficient operations of an organisation that makes no contribution to the industry or national development. Farmers bear these costs through the lower prices they receive for their products. On competitive international markets exporters cannot pass the commission on to their buyers so it is subtracted from the price paid to farmers. Cocoa remains a prescribed commodity under the VCMB legislation which continues in force. The continued existence of the VCMB legislation hangs over the industry, with the threat that the VCMB marketing monopoly could be restored.

Opportunity for Scale-up & Replication

The VOCCA CEO indicates that KAOKA can readily absorb double the current supply of certified organic cocoa from Vanuatu. It would seem that VOCCA would have little difficulty in selling 1,000 tonnes of high quality certified organic/single origin cocoa in Europe and the United States. Exports of 1,000 tonnes could be achieved in a combination of ways:

- Increasing the yields of existing members through the introduction of improved farm management practices and on farm selection of better yielding trees.
- An amalgamation with CGA.
- Extending operations to new areas opened up by road infrastructure.

It would seem that VOCCA has the management and systems infrastructure to handle a significant increase in exports. Investments need to be made in storage and office facilities. The expanded throughput would make these investments economically viable.

Organic certification and single growing export marketing is not new to Pacific islands. However, VOCCA is perhaps the largest and most significant development in this respect. The VOCCA experience has shown that Pacific island small holders, with the right organisation and support, can successfully produce for certified organic and single origin markets on a significant scale. However, to be successful this requires the involvement of companies such as KAOKA who are willing to be proactively involved in the development of these industries including making significant investment.

Conclusions

The key lessons from the VOCCA experience include:

- High quality cocoa exports can be a lead sector in broadly based economic growth.

- There are remunerative market opportunities available for organic and single origin commodities such as cocoa
- It is feasible to source significant volumes of certified organic product from Pacific island village farmers provided appropriate organisational support and internal control systems are in place.
- A substantial agribusiness can be successfully run as a cooperative in the Pacific islands if it has good management.
- Niche commodity export markets can only be developed if commodity marketing is deregulated and government and parastatal involvement removed.
- For niche commodity export industries quality standards should be set by the businesses developing the market and not by commodity boards and government agencies.
- These initiatives must be entirely private sector driven.
- Aid donors have an important facilitating role to play.
- Village youth can be empowered to take a successful leadership role in commercial agricultural development provided they get the necessary support from their elders.
- Companies wishing to source significant volumes of organic and single origin commodities from the Pacific islands need to be proactively involved in the development of these industries including making significant investment.