

Pre-Feasibility Assessment of a Pilot Agro Processing Initiative in Northern Vanuatu



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LIST OF ACRONYMS

BEE	Business Enabling Environment
CLA	CL Agencies
ECF	AusAID Enterprise Challenge Fund
FSA	Farm Support Association
HACCP	Hazard Analysis and Critical Control Points
KIT	Kernel-in-testa
NIS	Nut-in-Shell
NOM	Nuts n' Oils Malekula
RBD	Refined bleached and deodorized coconut oil
SPN/KS	South Pacific Nuts/Kava Store
VCCE	Vanuatu Copra and Cocoa Exporters Ltd.
VCMB	Vanuatu Commodities Marketing Board
VCPL	Vanuatu Coconut Products Ltd
V V	Venui Vanilla Co Ltd.

I. EXECUTIVE SUMMARY

Where the purpose is to enhance the livelihoods of rural people, aid funds spent on public facilities often produce small, slow, diffuse and disappointing results. More immediate benefits can be had through assisting those existing enterprises vitally concerned with overcoming restrictions in the market chain. The underlying principle of the approach is simple: if processors can sell more of their products, they purchase more from rural household who are the intended beneficiaries of the development assistance.

This pre-feasibility assessment examines where this concept might well be applied to a pilot project in northern Vanuatu. Five enterprises were selected for study. One produces retail products for the local market, two export specialty wholesale products and two are exporters of bulk products. All buy directly from primary producers.

Processing kava, nuts and fruits for local retailing, South Pacific Nuts/Kava Store buys from thousands of households throughout Vanuatu. The business needs to upgrade to a new factory on Santo island, estimated to cost AUD 2.5 million. Assistance is required to prepare a proposal, to find a suitable investment partner. Expanded production will require access to specialized food processing expertise and laboratory testing ability. When it expands to exporting, the company will need assistance in complying with food safety, labeling and bar coding requirements, and promotion.

Nuts'n'oils Malekula is developing a nascent industry based mainly on indigenous nuts and oils. It has an urgent need for assistance with marketing, including obtaining chemical analyses, market search and promotion. It plans to build a processing facility on Malekula for an estimated AUD 300,000 and will need assistance in employing a field officer, establishing organic and other certifications, access to specialized processing expertise and laboratory testing, compliance with health standards as well as access to overseas markets and promotion. A longer-term need is research into the medicinal properties of the oil from the indigenous nuts.

A survey of the nangae nut resource was undertaken and it showed that there are more than sufficient nut trees available to support the expansion plans of these two enterprises.

Venui Vanilla Co. processes and packs vanilla, pepper and other spices, 90% for export. It buys from over 300 small holders on a number of outer islands and maintains organic certification and high quality standards. Especially if it is to double its throughput, it needs assistance in employing a field officer, maintaining the organic certification regime, access to laboratory testing, compliance with food safety regulations and product promotion, especially at international food fairs. The company also proposes a program of training ni-Vanuatu, ultimately to become successful independent traders in spices.

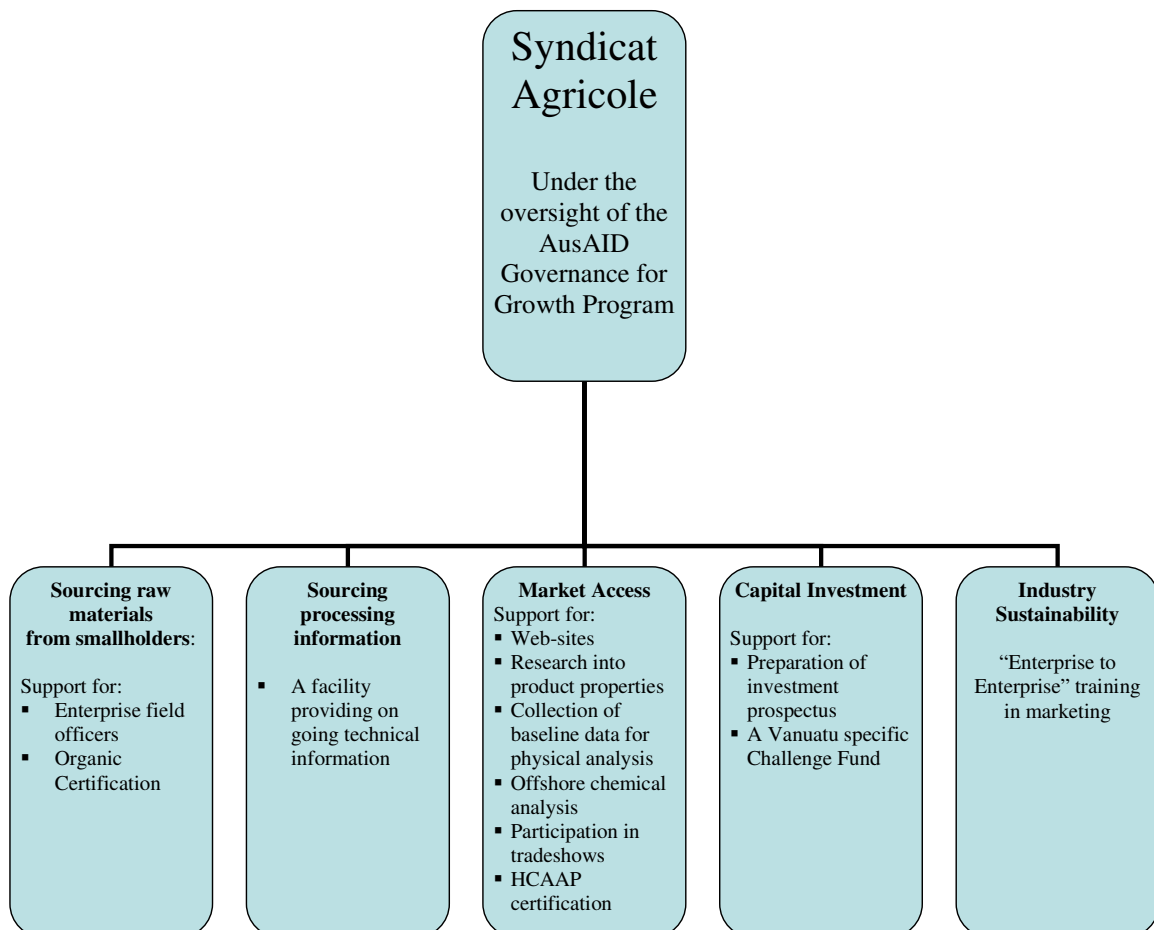
CL Agencies and Vanuatu Copra and Cocoa Exporters Ltd. (VCCE) both buy copra from some 15,000 farmers on most of the northern islands. CL Agencies needs to replace its oil milling equipment and aims to add a capacity to refine the crude oil. VCCE plans to build an oil mill. .

All five enterprises need assistance with capital financing. Some may fit the requirements of the regional Enterprise Challenge Fund but may find difficulty with its complex documentation requirements. The setting up of a challenge fund specifically for Vanuatu enterprise is recommended for consideration.

All the enterprises, to varying degrees, have a need for chemical assays of products but a chemical laboratory in Vanuatu is impractical. With sufficient baseline chemical data, however, assays can be made by physical means using equipment of the kind supplied by AusAID for assaying kava. A project activity is recommended for the gathering baseline chemical data on a range of products for this purpose. Until such data is available, the enterprises will need assistance to have assays made overseas.

An activity to support, extend and re-shape as necessary the existing organic certification structure is recommended along with the funding for two years the employment of a field officer for each of Venui Vanilla and Nuts'n'oils Malekula. Support should also be given to Venui Vanilla's concept of "enterprise to enterprise" training of ni-Vanuatu buyers who will later become successful independent traders in spices and other export products.

In keeping with the private sector led philosophy for agricultural development that underpins this initiative it is proposed that implementation be through the sector itself. It is recommended that consideration be given to utilizing the Syndicat Agricole for this purpose, with the necessary organizational and technical support being provided. It is suggested that oversight for the initiative be provided by AusAID Governance for Growth Program. A schematic outline of a suggested structure is presented below:



The conclusion of this pre-feasibility assessment is that the proposed pilot initiative is worthwhile and could make a significant contribution to pro-poor growth in Northern Vanuatu. It recommended that AusAID now proceed with the design phase of this initiative. The undertaking of an additional feasibility study is not deemed to be warranted.

II. BACKGROUND

The main priority set out in the Government's *Priorities and Action Agenda 2006-2015* is to create an environment for private sector led growth. For this objective to benefit the greater part of the population, emphasis needs to be given to rural areas. Development partners are therefore encouraged to focus attention on rural economic growth.

Past efforts to enhance rural economic activity by providing various kinds of infrastructure have generally produced disappointing results. If aid funds are to be used more effectively, it is apparent that they should be applied more directly to the market chain. Stimulating the business activity of the pivotal actors in it can produce quite rapid flow-on effects, extending benefits along the chain and especially to the primary producers. It is the processors of agricultural products who are the pivotal actors and five of them have been identified for this pre-feasibility assessment.

The original concept of the pre-feasibility assessment was to involve only one enterprise South Pacific Nuts (SPN), more commonly known as the Kava Store. This enterprise was to be evaluated in considerable detail. However, an evaluation of just one enterprise was considered too narrow to test the feasibility of the concept, particularly as SPN was not yet based in northern Vanuatu. A total of five existing agro processing enterprises were finally selected for this initial assessment. The chosen enterprise have been examined to varying degrees, but sufficiently to be a sound base to allow for the follow-up design of this pilot initiative. The purpose is to indicate where assistance might most effectively be directed to yield the best possible pro-poor outcomes.

III. HOW AN ENTERPRISE FOCUSED PILOT INITIATIVE MIGHT WORK

Robust market demand for outputs is crucial to agricultural development and will underpin agricultural growth in Vanuatu. The hypothesis is that where greater demand drives market expansion, producers and other market participants will take action to alleviate constraints and pursue opportunities.

A. The type of assistance proposed

A number of studies assessed the necessary requirements for expanded agricultural marketing in Vanuatu and other Pacific Island countries (PICs) and found them to be: infrastructure (roads, shipping, and market facilities); reliable telecommunications; and, adequate financial services. The proposed agro-processing initiative is not however intended to contribute to meeting any of these requirements. The intention is to assist enterprises to make best of the prevailing situation.

Two broad types of assistance could be provided under this private sector orientated initiative. These are:

- broadly based public goods that improve the operations of the private sector; or,
- targeted interventions that assist specific enterprises address identified constraints.

Broadly based public goods, such as market information, can directly benefit all. However, due to weak delivery institutions the cost of successfully providing them can

be high and not sustainable. Also the lead time in achieving tangible benefits from supplying them can be long.

On the other hand, the benefits from targeted assistance to a specific enterprise can be quickly realised. However, there is concern is that the immediate benefits accrue to an individual enterprise and potentially give that enterprise an unfair advantage. To overcome this problem any initiative must be designed in such a way that any assistance provided to a particular enterprise:

- must have significant flow on benefits to the rural suppliers of the enterprise; and,
- must be freely available to other enterprises participating in that industry. In the context of agro processing in rural Vanuatu this is not a major issue because of the few enterprises involved.

B. Where the assistance should be focussed

The concentration should be on:

- **enterprises in the value chain rather than the elements of the value chain.** This is because enterprises, being in the private sector, are more likely to provide sustainability because it is in their own best interests to address the constraints.
- **value added products** which have good growth prospects and where a significant impact can be achieved in a relatively short period of time.
- **enterprise at or near the upper end of value chain.** These enterprises can “pull” products through the value chain much more than the same products can be “pushed” through the chain by suppliers from isolated rural areas which are the target beneficiaries. As Andrew Shepherd of the FAO said “the starting point for any linkage is the business that will buy the product”¹. As he notes, a good many agricultural projects ignore the end buyer. This has certainly been the case in Vanuatu and other PICs. Enterprises selected for assistance under this initiative should:
 - have a proven track record, or well thought through business plan with clearly favourable prospects;
 - purchase products from remote rural locations;
 - add significant value to the agricultural products handled;
 - add to the sustainability of the industry in which the enterprise participates;
 - have opportunities to expand their markets and increase value addition; and,
 - be able to benefit significantly from the targeted interventions available.
- **providing enterprise with targeted interventions that address identified constraints,** allowing tangible benefits to be quickly realised.

C. Dealing with issues transparency and equity

In the interest of equity and transparency any assistance to a particular enterprise must be justified in terms of flow on of maximum benefits to rural suppliers, particularly those in isolated locations. Furthermore any information or assistance provided to a particular enterprise must be readily available to any other interested enterprises.

¹ Shepherd, Andrew “Agricultural Marketing in the South Pacific” **FAO** Sub-Regional Office for the Pacific 1999.

IV. THE PRE- FEASIBILITY ASSESSMENT ENTERPRISES

A. The selected enterprises

The selected enterprises are:

- South Pacific Nuts/Kava Store (SPN/KS)
- Nuts n' Oils Malekula (NOM)
- Venui Vanilla (VV)
- CL Agencies (CLA)
- Vanuatu Copra and Cocoa Exporters Ltd. (VCCE)

Summary background on these five enterprises is presented in table 1, with more exhaustive information provided in Annex A. These five represent a near exhaustive list of commercial agro-processing currently operating in Northern Vanuatu. There are lessons to be learned from the experience of other agro-processing ventures operating in Northern Vanuatu that have closed in recent years².

This pre-feasibility assessment does not consider forest product processors (eg Santo based Melcoffe whitewood sawmill) or meat processors (the Santo Abattoir) operating in Northern Vanuatu. Tanna Coffee was excluded because it operated outside the Northern Vanuatu focus of the pilot initiative. The Santo based Vanuatu Coconut Products Ltd (VCPL) was excluded because it not a private sector owned enterprise.

All the selected enterprises source their raw material from small holders. These businesses can be broadly classified into 3 enterprise types, which provides a useful basis for analysis. These enterprise types are:

- packaged retail products for local markets, with the goal of eventually extending to export markets (SPN/KS);
- specialty wholesale products for export markets (NOM and VV) ; and,
- value adding bulk export commodities (CLA and VCCE).

Each of these enterprises was found to have certain visions and goals, the realization of which would lead to growth and positive pro-poor outcomes. Each enterprise faces identified constraints to achieving these visions and goals. Some of these constraints are common to all, while others are enterprise-specific.

² These include the Santo based:

- Virgin coconut oil venture, that had invested in the state of the art processing equipment that closed apparently as result of being undercapitalized while it tried to develop markets.
- Pacific Nuts that was established to export high quality nangae nut kernel to French bakery industry. The venture floundered when it was excluded from EU market due to provisions of the Novel Food Act.

1. Packaged retail products sold on local markets (SPN/KS)

a. Enterprise background

The development of the Vanuatu nut industry, unlike the Solomon Islands and PNG, has been entirely in the hands of the private sector. For this reason it has been more successful, despite a more limited resource base. Significant volumes of navelle, nangae, natapoa, and namambe are sold on municipal markets. Nut kernel receives the highest price per kg sold on the markets. Nuts are now also regular offerings in stores and commercial nakamals (kava bars). The driving force behind this broadening of the market for nuts has been Charles Long Wah of the Kava Store located in Port Vila. Profits from kava have been used to develop the processing and marketing of nuts and other local products. In 1989 Kava Store began buying, processing, and selling nangae, navelle and natapoa under the registered name of South Pacific (SPN). SPN also peanuts, assorted tropical fruits (mango, pineapple, pawpaw, soursop, pineapple) and chillie and tamarind. Charles Long Wah is a self taught enthusiast. He is a recognized authority in the South Pacific Region on the village level processing of nuts and fruit.

b. The current situation and pro poor outcomes

Supply has been the major constraint to market development, so that the company has concentrated on developing the domestic market. Faced with a severe shortage in deliveries, he has actively promoted the planting of nut trees through radio messages and leaflets. (Because for both this enterprise and NOM supply of nangae nuts is of major importance, a sample survey of growing trees was carried out to assess whether the alleged shortage was real. It showed a more than adequate supply of the resource. See Annex D).

Business for SPN business peaked in 2002. Long Wah reports that in that year some 10,000 rural households sold produce to Kava Store in Vila. An estimated total 22 million vatu was paid to these suppliers of which 10 million was paid for kava and 6 million for nangae. It is Long Wah's view that this peak supply was well below demand. Since that time the volume handled has approximately halved as a result the break down in rural communications (radio and telecommunications) and increasing transportation costs to ship raw materials to Vila.

c. Vision and goals to achieve pro poor outcomes

To resolve the problem of raw material availability Long Wah proposes to build a multi product (indigenous nuts, peanut, fruit and kava) processing facility in Santo. The estimated start-up cost for this processing facility is AUD2.5 million. Projections for the facility have it exclusively supplying the domestic market for the first 3 to 4 years of operations, then extending to exporting to New Caledonia and eventually to wider export markets. Long Wah's vision is for the Santo processing facility to become a regional training center for appropriate village level food processing.

SPN projections for the Santo facility are presented in Annex 2. It is expected that the facility will be supplied by 5,000 to 6,000 rural households. Projections of the resulting income going to these households are as follow:

	after 5 years	after 10 years
Indigenous nuts	10 m vatu	39 m vatu

Kava	36 m vatu	69 m vatu
Fruit	5 m vatu	10 m vatu

Based on figures supplied by Charles Long Wah, it is shown that the Santo facility could be commercially viable (annex C). The viability of the facility would be greatly enhanced if the amount of produce handled by the facility could be significantly increased.

d. Identified constraints to achieving the targeted pro-poor outcomes

i. Sourcing raw materials from small holders

SPN identifies the high cost of sourcing raw materials from remote locations and poor communications to be the primary constraints to expanding the business. A processing facility located in Santo will significantly reduce the cost and improve availability of transportation for suppliers in Northern Vanuatu, who will use existing shipping services built around copra trading.

ii. Processing expertise and information

SPL is renowned for developing appropriate/village level processing techniques. Long Wah recognizes that specialized food processing expertise will be required for the Santo food processing facility, acknowledging a particular need for efficient access to laboratory and analytical facilities.

iii. Marketing and market access

Selling locally, market access has not been a major issue. This situation will change dramatically when SPL moves to selling packaged retail products on export markets. Meeting the labeling and the food safety regulatory requirements of importing countries will be a serious obstacle to market access. Vanuatu does not have laboratory testing facilities for food products. The experience of Pacific Nuts provides a valuable market access lesson. Pacific Nuts established processing operations in Santo in the late 1990s to supply high quality nangae (*Canarium*) kernels to the French bakery industry. This promising enterprise failed because under the provisions of the Novel Food Act *Canarium*, and other indigenous nuts, are not permitted entry into the EU. The prohibition on nangae for edible purposes remains in place (see Annex E for the European Commission determination of the importation of nangae from Vanuatu)

iv. Capital investment and financing

The estimated start-up cost of the Santo processing facility is approximately AUD 2.5m (Annex C). Of mature years, and as the sole proprietor of the SPN/KS, Charles Long Wah has indicated that he is not willing to finance the venture from his own resources. He is, however, willing to provide intellectual capital and initial management for the venture. The challenge will be to find a suitable joint venture partner willing to invest substantial financial resources into the venture. Without such an investment, the project is unlikely to satisfy the requirements of the AusAID Enterprise Challenge Fund (ECF).

v. The Business Enabling Environment (BEE)

As a well-established business in Vanuatu, SPN/KS has no evident difficulty with BEE.

vi. Enterprise and industry sustainability

Vanuatu's unique edible nut and fruit processing industry, often presented as a model for rest of the region, is wholly dependent on the knowledge and enthusiasm of Charles Long Wah, but cannot continue in its present form beyond a few years. . The survival of so promising an industry depends on the transfer of his intellectual capital to a sustainable business form with a substantial investment of capital.

2. Specialty wholesale products for export markets (NOM and VV)

a. Enterprise background

Both Bruce Hannent (Nuts n' Oil Malekula) and Piero Bianchessi (Venui Vanilla) are investors who have been attracted to living in rural Vanuatu and have adapted successfully to a difficult business environment. The 2002 ADB Agricultural Sector Review describes the importance of such enterprises for commercial agricultural development in Vanuatu³, to quote:

One of the lesson learned since independence is that the Vanuatu agricultural sector is too small to support large scale private or public sector agricultural development projects. All the major new investments made in agriculture production since independence, both in the private and public sector, have failed.Successful agribusiness enterprises have been established, usually starting on small scale, by individual entrepreneurs, not by large corporate investors (p 16).

NOM and VV are examples of such agribusiness enterprises. Both enterprises produce high value specialty niche products for export markets.

Venui Vanilla commenced operation at South Santo in 1987. The business grows, buys, processes, and wholesales spice products, the main products being vanilla and pepper. Exports account for over 90% of sales— almost entirely wholesale bulk packs. A small volume of packaged retail products is sold on the local (tourist) market. Venui Vanilla has the well deserved reputation of producing the finest quality vanilla and pepper in the South Pacific region. Details of the operations of VV are presented in Annex A.

NOM is in the start-up phase of operations and specializes in nuts and oils for wholesale export markets. These products are:

- tamanu oil is sold for cosmetic and pharmaceutical uses;
- nangae dried kernel and oil sold for cosmetic, pharmaceutical and potentially food uses; and,
- virgin coconut oil for cosmetic and potentially food uses.

While NOM is a relatively new business, the proprietor has had long experience in agricultural management in Vanuatu, PNG, UK and Australia. Details of NOM operations and the products handled are presented in Annex A.

³ Asian Development Bank. Vanuatu: Policy Issues in the Agriculture, Fisheries and Forestry Sectors. Pacific Studies Series 2002.

b. The current situation and pro poor outcomes

NOM sources nangae and tamanu kernel from all of Malekua, but particularly from the more accessible North-East. Since July 2007 NOM purchased from 200 households – 8 tonnes of raw tamanu kernel for 700,000 vatu and 11 tonnes of nangae kernel for 2.8 m. vatu.

VV sources cured vanilla beans from south and west Santo, Malo, Ambae, south Tanna, Futuna and Aneityum. Parts of Ambae and Aneityum/Futuna are regarded as particularly isolated areas with very limited income earning opportunities. Purchases are from around 300 rural households, of which at least 100 are in isolated locations with no road access. In 2007 around 3 tonnes of cured vanilla were purchased for which 6.6 m vatu was paid (50% going to remote areas of Ambae). An additional 700,000 vatu was paid for pepper.

c. Vision and goals to achieve pro poor outcomes

NOM's vision is to establish a sustainable oil processing industry on Malekula. Its goal is:

- 50 tonnes of raw tamanu kernel annually, sourced from 300 households and,
- 55 tonnes of nangae kernel annually, source from 400 households.

The annual value of such an industry to Malakua would be about 18 million vatu, with much of the nangae coming from remote areas in the south and southwest.

VV's vision is for a sustainable Vanuatu spice industry based on the export of premium quality vanilla and pepper products. While this industry has been existence for 20 years and is the most successful in the region, it is still dependent on the continued leadership of Venui Vanilla. V.V. aims for an industry that benefits some 600 households, most being in more remote locations. The value of this industry to rural households would be from 10 to 20 million vatu annually.

d. Identified constraints to achieving pro-poor outcomes

i. Sourcing raw materials from small holders

Both NOM and V.V have high overhead costs in sourcing products from remote locations. There is an ongoing problem of getting information to farmers on supply and quality requirements.

Organic certification has become a necessary condition for the successful marketing of these products. Many of V.V. growers now have organic certification thanks to collaboration with the Farm Support Association (FSA) and initial donor support. V.V. now faces the challenge of efficiently maintaining and expanding this certification. NOM is still to establish organic certification for its products and will need considerable assistance in doing so. There is considerable scope for the two enterprises to collaborate and to both work with the FSA.

For efficient sourcing of products from remote locations both enterprises need assistance to establish a small field service of one or two persons. The field officer would handle liaison with growers, including buying. Such a person with further training

would take over other functions and in effect become an assistant manager and thereby strengthening enterprise and industry sustainability

ii. Processing expertise and information needs

Agro processing is highly demanding in terms of technical expertise and information. Numerous technical issues of processing, storage, packing, and equipment requirements have to be resolved. Meeting these requirements cost effectively is even more challenging for a small business, processing little-known products in remote locations. Venui Vanilla's Piero Bianchessi had an advantage in being a chemist by training so that VV's production processes are now stabilized, producing world class products at south Santo . However, resolving technical problems has taken time and has been at considerable cost to the enterprise and using personal networks to obtain assistance.

These problems are more acute for NOM in its start-up phase. The company is handling little known oil products for which very little applied research has been undertaken, let alone available in the public domain.

Both enterprises would benefit greatly from access to a facility providing ongoing access to high quality food technology and processing advice and information. These enterprises are at considerable disadvantage in not having cost effective and timely analytical information on their products. It is for this reason that both enterprises focus of selling wholesale products to brokers for repacking in the destination export markets, rather than exporting higher value retail products packaged in Vanuatu. Recommendations are made for improving access of to the required analytical information.

iii. Marketing and market access

Although Vanuatu's indigenous nuts have unique and highly desirable properties, they are little known outside Melanesia. A pioneer enterprise like NOM must therefore spend a disproportionate amount of resources on product promotion⁴. Wikipedia refers to canarium nut kernel as "being high in calcium, phosphorus, and potassium, and rich in fats and protein. It yields a light yellowish oil, mainly of glycerides of oleic (44.4 to 59.6%) and palmitic acids (32.6 to 38.2%)". Nangae oil has excellent penetrative ("carrier") properties, sought after by the skin care industry and is claimed to have exceptional anti-inflammatory properties equivalent to those found in sweet almond oil. Similar desirable properties are attributed to tamanu oil www.medicinehunter.com/tamanu/.htm), which is somewhat better known. NOM will need to be able supply verifiable information of this sort if it is to attract interest from

⁴ The experience of the Hawaiian Macadamia nut industry is relevant here (see McGregor Andrew M. Macadamia: a tropical nut industry example. in Stevens M. L., Bourke R.M., and Evans B. R, South Pacific Indigenous Nuts, ACIAR Proceedings No. 69. 1994) Macadamia nuts were introduced into Hawaii from Australia (they are indigenous to Northern NSW) in the 1880s. However, the industry did not really take off until the 1980s when a large amount of investment was made in marketing and product promotion. Mauna Loa Macadamia Nut Corporation, the world's largest macadamia nut company, established a marketing organisation for the distribution of a full range of macadamia nut products under its own brand name. It is reported that the company spent over USD20 million on advertising alone. The industry now valued at over USD 300 million was built on vigorous agribusiness participation.

brokers. Assistance could be given in sourcing this information. This assistance could take the form of support for:

- the collection and analysis of baseline data to allow the eventual physical determination (near infrared spectrophotometry) of the composition of nut products for export (as is now feasible for Vanuatu kava)
- Support for the offshore chemical testing of the composition of exported nangae and tamanu products until physical determination becomes feasible.

The need to create product awareness is less acute for Venui Vanilla, as vanilla and pepper are well established products. However, quantifiable determinants of quality are the content of vanillin (for vanilla) and pepperine (for pepper). VV scores highly in terms of other characteristics of quality – appearance, feel and aroma - which happen to be highly correlated to vanillin content. However, VV is put at a distinct marketing disadvantage without an objective way to measure vanillin in Vanuatu. Thus the type of assistance suggested for NOM would also be very helpful for spice product exporters.

In addition to organic certification, food and pharmaceutical product safety certification is increasingly becoming a requirement of buyers. Formally known as Hazard Analysis and Critical Control Points (HACCP), it is a systematic, preventative approach to food and pharmaceutical safety that addresses physical, chemical, and biological hazards as a means of prevention rather than finished product inspection⁵. These standards are laid out under FAO/WHO's Codex Alimentarius ("Codex").⁶ The longer term competitiveness of NOM and V.V will require this type of certification and they will need assistance in obtaining it.

The meteoric growth in trade through the Internet provides increasing opportunities for marketing high value exotic products from remote locations. The Internet offers the opportunity for direct sales to consumers without major investment in promotion and marketing. This technological innovation heralds a major reversal in the way markets are developed, which can level the playing field in favour of small countries. Vila based Volcanic Earth, a buyer of NOM's tamanu oil and virgin coconut oil, makes extensive use of the internet in its marketing efforts (www.volcanicearth.com) . VV recently obtained assistance from CDE to preparing a web site, which has shown considerable promise as a marketing tool (www.venuivanilla.com). VV still faces the constraint of using commercial banks in Vanuatu to receive payment for credit card sales over the internet. All these businesses need ongoing assistance in making the best use of the internet to overcome constraints imposed by the "tyranny of distance".

⁵ HACCP Certification would specify for the compliant enterprise: potential food safety hazards (potential field contamination and potential process-related hazards); packaging; storage and distribution; consumer complaint procedures; recall procedures. For each critical control point in the system the HACCP certification would specify the hazards to be controlled, preventative measures to be taken, critical limits, monitoring procedures, corrective actions, record keeping, and verification

⁶ The Codex Alimentarius Commission was created in 1963 by FAO and WHO to develop food standards, guidelines and related texts such as codes of practice under the Joint FAO/WHO Food Standards Programme. The main purposes of this Programme are protecting health of the consumers and ensuring fair trade practices in the food trade, and promoting coordination of all food standards work undertaken by international governmental and non-governmental organization (http://www.codexalimentarius.net/web/index_en.jsp)

iv. Capital investment and financing

NOM currently operates out of inadequate rented facilities in Lakatora Malekula. The company plans to build a custom built facility containing the necessary machinery (expellers, filtration, driers, storage tanks, and cool room) The facility will need be to a standard that can in the future be HACCP certified. A block of land has already been acquired by NOM for this purpose. NOM estimates the cost of this facility to be around AUD 300,000. This investment seems to be well suited to ECF funding but NOM, like other small PIC enterprises, may find it difficulty to meet the excessively demanding documentation requirements of the ECF.

VV has over time built up a high quality processing facility at south Santo, at a cost of some AUD 200,000. Additional funding will be required to make the facility HCAAP compliant and to meet the cost of certification. This investment may not be of sufficient scale to warrant ECF funding.

Both the enterprises have an ongoing need of sufficient working capital to purchase produce from farmers, who must be paid cash on delivery. There can be a considerable time-lag between when the produce is purchased from farmers and when the final product is sold and payment received. NOM currently has 8 tonnes of nangae kernel in store for which some 2 million vatu was paid out. VV has over 3 tonnes of cured vanilla in stock for which nearly 7 million vatu was paid. It is expected that it will be at least another 12 months before market conditions warrant selling off a significant part of this stock.

In 2000 the highly promising Pacific Nuts venture was forced to close because it did not have sufficient working capital to ride out inevitable delays and “hiccups” in securing market access. In 1997/98 purchased 56 tonnes of nangae NIS from nearly 500 separate suppliers from 53 identified villages and hamlets⁷. The company could not endure this financial burden when it was blocked entry to its identified buyers in French bakery industry by the EC Novel Food Regulation. The same fate befell the investors in the Santo-based state-of-the-art virgin coconut oil factory that closed in late 2007 after being in operation for less than 6 months.

There is a need to work with the commercial banks in the development of a facility to provide affordable working capital to proven agro-processing ventures that buy from small holders.

v. The Business Enabling Environment

NOM has found valuable niche markets in New Caledonia but direct export out of Malekula has proved impractical only because of the absence of satisfactory Customs and Quarantine services on the island. The absence of internet services on Malekula and poor telecommunications generally has also put NOM at a considerable disadvantage. This situation is expected to improve greatly with the deregulation of telecommunications.

⁷ Land Use Planning Project Land-Use Profile: Tree Nuts Nov 1999

For VV a major frustration has been the inability of the commercial banks to provide for credit card payments to Vanuatu bank accounts for sales made over the internet sales.

Overhanging all agro processing export ventures is the ever present threat that the Vanuatu Commodities Marketing Board (VCMB) will declare their product a prescribed commodity. For specialized niche products such as nuts and spices, such an intervention would be a death-knell, as was so for ginger exports in 1998.⁸ The threat of VCMB involvement discourages much needed investment in these industries and will not be removed until the VCMB Act is repealed.

vi. Enterprise and industry sustainability

Small entrepreneurial investors have been at the vanguard of agro-processing development in Vanuatu but their enterprises by their very nature suffer from being very key-person dependent. The vanilla industry provides an excellent example of this phenomenon. Vanuatu has developed a significant vanilla export industry based on a reputation of premium quality at a time when the Tongan and PNG vanilla industries have all but disappeared, yet the success is entirely dependent on the expertise of the proprietor and the niche markets developed by him. Fortunately he recognizes the problem and has proposed a creative solution that provides for a sustainable Vanuatu spice export industry that is not dependent on V.V. This proposal should be supported by the pilot agro processing initiative.

3. Value adding bulk export commodities (CLA and VCCE).

a. Enterprise background

CL Agencies (CLA) is Vanuatu's largest agro-processing enterprise. Since May 2007 CLA has operated the Santo mill on behalf of the COPV Receivers PKF and Westpac Banking Corporation and is currently negotiating to purchase the mill. CLA is managed and 100% owned by Clair Donic, who has a history of trading copra in Vanuatu dating back to the early 1990s. The performance of CLA has been a major contributing factor in the favourable reversal in the fortunes of the coconut industry (2007 Vanuatu Coconut Industry Review). CLA manufactures crude coconut oil for export to European markets

⁸ This debacle was describe in the Land Use Planning Project's Ginger Profile:

Having encouraged a large number of farmers to grow ginger, without any consideration of marketing arrangements, the government was forced to find markets for a perishable standing crop. Thus ginger was designated a prescribed commodity, which meant the Vanuatu Commodities Marketing Board (VCMB) was now legally obliged to buy all ginger on offer. The VCMB was left in the unenviable position of having, at short notice, to buy and market a perishable speciality product for which it had no experience or aptitude. For the 1998/99 season the VCMB ended up purchasing 339 tonnes of mature green ginger. To put this figure in perspective New Zealand entire ginger imports in 1998 were only 398 tonnes. This venture proved a complete write-off for the VCMB. Neither the VCMB nor the farmers were aware of the fundamental requirement of curing ginger after it is harvested to enable it to be stored. Thus most of the ginger purchased quickly rotted in a poorly ventilated Vila warehouse. Two containers of ginger were shipped to New Zealand, for which payment is yet to be received. There was a futile belated attempt to dry some ginger. The total loss to the VCMB of its ginger venture was estimated to be around 20 million vatu (p, 8).

and exports coconut meal to New Zealand. The company's plans to invest in oil refining capacity warrant its consideration under this pilot initiative.

VCCE commenced operations in 2003. It is a joint venture between Sethy Luwi William (25%) and Holland International (75%). Sethy William was previously marketing manager for VCMB. Holland International is an Australian based international commodity trader, which is also active in Solomon Islands and PNG. Currently VCCE does not qualify as an agro-processing enterprise as it is only exporting copra, cocoa beans and kava. However, it now has firm plans to invest in a copra oil mill and will then become a substantial agro-processing entity.

b. The current situation and pro poor outcomes

Both companies buy copra from all of Vanuatu's coconut growing areas of Northern and Central Vanuatu (Santo, Malo, Malekula, Epi, Ambrym, Ambae and Banks/Torres. Banks/Torres, Ambrym, Epi regarded as particularly isolated (poor). CLA buys copra from over 15,000 households, of which 3,000 to 4,000 are classified as being in remote locations. Between May 2007 and the end of February 2008, CLA purchased 17,841 tonnes of copra for which 583 million vatu was paid. In 2007 VCCE purchased 9,401 tonnes of copra for which 282 m. vatu was paid, 960 tonnes of cocoa for which 129.6 m. was paid, and 100 tonnes kava for which 100 m. vatu was paid.

c. Vision and goals to achieve pro poor outcomes

The goal of CLA is to own and operate a substantial commercially viable agro processing enterprise based on the export of refined coconut oil. VCCE'S goal is to transform itself from exporter of copra to manufacturer and exporter of coconut oil. The changes occurring in world trade will make these transformations essential to the continuation of the coconut industry and hence the incomes for over 15,000 families.

d. Identified constraints to achieving pro-poor outcomes

i. Sourcing raw materials from small holders

For CLA and VCCE to achieve their long terms goal will require substantial replanting of coconuts and improvement in copra quality through improved driers. CLA has on site machinery to manufacture flues for copra driers. It is looking to Government or a donor to supply steel as part of a public private sector partnership.

ii. Processing expertise and information

The manufacture of bulk coconut oil, unlike the sophisticated products produced by the other three enterprises, is a basic, well known process. The only identified needs for processing information is to have cost effective access to certified analytical laboratory facilities, to measure such things as free fatty acid (FFA) impurity content, iodine value of oil, aflatoxin and protein content (for meal).

iii. Marketing and market access

The world market for copra is fast disappearing. With the recent closure of the last Europe based copra crushing operation, the copra market is now limited to buyers in Bangladesh, Philippines and mills in other Pacific islands. These markets are not

regarded as stable and can be expected to disappear over the next few years. The Vanuatu coconut industry will depend increasingly on refined coconut oil RBD (refined, bleached and deodorised). RBD offers a much wider range of buyers and significantly adds value when compared with the bulk crude coconut oil currently exported from Vanuatu. CLA, and eventually VCCE, will need to invest in oil refining capacity to produce RBD.

iv. Capital investment and financing

The old milling equipment at Santo is inefficient. The (reported) requested price for the COPV mill is considered excessive, given the fully depreciated state of the equipment. Total cost of the replacement equipment is estimated by CLA at AUD 2 m, or AUD 2.5 m. if the refinery is included. This investment project is highly suitable to ECF funding provided CLA is able to purchase COPV from the Receiver at a realistic price.

VCCE is proposing to invest in a small mill producing crude oil (capacity to handle 12,000 to 15,000 tonnes of copra). The capital cost of the equipment is estimated by VCCE at approx AUD 900,000. Investment in copra storage facilities, estimated to cost AUD 24,000, is required. This Project would also be well suited to ECF funding.

v. The Business Enabling Environment

The BEE presents a major constraint to CLA operations and investment plans. All three copra exporters receive a subsidy of 3,000 vatu per tonne paid by the government via VCMB. CLA as oil exporter is not eligible for the subsidy. Paying a subsidy when copra prices are at historical high has no logic unless it has a political purpose. The discriminatory nature of the subsidy is a major threat to the survival of CLA in a highly competitive buying environment.

vi. Enterprise and industry sustainability

CLA, as with SPN, NOM and VV, has a high level of key person dependency. However the barriers to entry into bulk coconut manufacturing are far less than for those highly specialized niche businesses. Nevertheless, the discriminatory business enabling environment threatens sustainability by discouraging much needed investment in Vanuatu's most important industry.

V. PROPOSED ACTIONS UNDER THE PILOT AGRO-PROCESSING INITIATIVE

A number of enterprise focused actions are proposed for consideration in the design of a pilot agro-processing initiative. These are presented below.

A. Sourcing raw materials from small holders

The initial high overhead cost of sourcing raw material from small holders in remote locations was identified as a major constraint for the enterprises producing wholesale products for export markets. To ameliorate this constraint it is recommended that the pilot initiative:

- Meet the cost of field officers employed by NOM and VV for a period of two years, conditional on the enterprise giving an undertaking that it would continue to employ the field officer after the initial 2-year period.

- Assist NOM to establish organic certification, with technical assistance and funding of initial overhead costs. This organic certification should be linked with the VV and FSA organic certification system.
- Provide further support for the existing organic certification network by improving internal control systems and training of certifiers.

B. Sourcing processing expertise and information

Enterprises such as NOM and VV would benefit greatly from access to a facility providing ongoing access to high quality food technology and processing advice and information. When SPN/KS moves into exporting, the same requirements will apply. An immediate priority need is ongoing expert technical advice on the processing and handling of specialty oils. Such a facility would provide for one-on-one consultations and trouble shooting with individual enterprises and a remote referral service involving a senior specialist to deal with ongoing problems.

C. Marketing and market access

Nangae, and other indigenous nuts, have the potential of becoming for Vanuatu what the Brazil nut is for the Amazon or the Macadamia nut is for Hawaii. However, resources are required to make their desirable attributes known to the wider world and in particular to brokers and buying agents. Specifically this might include:

- Supporting enterprises to establish and maintain web-sites that enable the sale of products on-line;
- Supporting confirmatory research into the desirable properties attributed to nangae products and tamanu oil;
- Establishing a project to collect and analyse baseline data to allow the eventual physical determination of the composition of nut products for export. Until physical determination is feasible, support is required for enterprises to obtain offshore chemical analysis.
- Ongoing supporting enterprise to attend fine food fares and other trade shows.

Technical and financial assistance is needed for enterprises to obtain HCAAP (food and pharmaceutical safety) certification.

Europe is a major market for nuts and nut products but this market remains closed until the ban on imports under the Novel Food Act is removed. Vanuatu, and other Melanesian countries, will require assistance in the preparation of representations to have this unreasonable ban lifted.

D. Capital investment and financing

Four of the five enterprises under review require substantial investments of capital to achieve their pro poor rural growth visions. At least in the case of SPN/KS and NOM it will be difficult to secure conventional commercial bank financing due to the difficulty of providing realizable security to the lender.

The capital investment requirements are greatest for SPN/KS, being in the order of AUD 3 million to establish a processing factory in Santo. The challenge will be to find a suitable joint venture partner willing to invest substantial financial resources into the venture. It is unlikely that this project will be amenable to ECF financing, given the

unwillingness of the proprietor to invest his own financial resources into the Santo factory. Based on figures provided by the proprietor a preliminary analysis suggests the project can be financially viable (appendix B). The assessment of the nangae nut resource undertaken for this feasibility assessment indicates that there is more than sufficient raw material available to support the venture. At this stage the assistance needed by SPN/KS is in preparation of an investment prospectus that can be used to attract joint venture partners.

NOM, CLA and VCCE all have capital investment proposals that are suited to ECF funding and all have expressed interest in submitting proposals. These small enterprises may find difficult the unduly arduous documentation requirements for the ECF, if the recent Fiji experience is anything to go by. Consideration should therefore be given to establishing a small Vanuatu-specific challenge fund for rural enterprises based on the principles of the regional initiative but with simpler operating procedures. Such a recommendation was made in the recent AusAID Strategic Review of the Coconut Industry and Commodities Marketing. The report specifically recommended establishing a "matching grant challenge fund" to assist the development of the coconut value added industry through the support of approved investment projects.

The Coconut Industry Strategic Review also recommended: "Establishing a revolving credit fund to provide working capital to the industry along the lines of the EU funded Producer Organization Project model. To be sustainable this fund should be operated through a commercial bank". This recommendation logically extends to other agro processing enterprises.

E. The Business Enabling Environment

A number of BEE constraints were identified with respect to agro processing development. In the private sector, there is a need to initiate discussion with commercial banks to ensure that remote enterprises can take full advantage of the opportunities created by the internet and e-commerce.

Investment in coconut processing is severely constrained by the effect of discriminatory subsidies. The constraint can be simply resolved by repeal of the VCMB Act. The closure of the VCMB would also remove the uncertainty over handing other agro processing enterprises that their products may become prescribed commodities some time in the future.

F. Enterprise and industry sustainability

The owner-manager of Venui Vanilla, Piero Bianchessi, identified the challenge of ensuring that the successful Vanuatu spice export industry continues to prosper and grow beyond the commercial life of VV. He has proposed a creative solution that, if successfully implemented could be applied to similar enterprises in other industries.

Bianchessi for the last two years has been involved with a AusAID Project in the Solomons Islands that supports the development of the fledgling vanilla and spice industry in that country. The approach involves the training of emerging marketing entrepreneurs. Hands on training are provided in all aspects of the spice industry value chain. A key activity in this project will occur in 2008, when Mr Bianchessi will accompany a few selected entrepreneurs to the market place where they will meet

potential buyers and familiarize themselves with their requirements. It is recommended that this innovative industry development approach be adopted in Vanuatu, contracting the services of VV to provide this training. It is anticipated that in the short to medium term, these emerging marketing entrepreneurs will become agents for VV. However, over time some will emerge as exporters in their own right with the marketing skills and contacts to be successful.

G. A summary of the proposed actions

A summary list of the proposed actions for consideration is:

Sourcing raw materials from small holders

- Support for field officers employed by NOM and VV for two years.
- Assist NOM establish organic certification with technical assistance and funding of initial overhead costs
- Provide further support for the FSA organic certification support network by improving internal control systems and training certifiers.

Sourcing processing expertise and information

- Provide access to a facility providing ongoing high quality food technology and processing advice and information.

Marketing and market access

- Support enterprises to establish and maintain appropriate promotional web-site that enable the sale of products on-line;
- Support confirmatory research into the desirable properties attributed to nangae products and tamanu oil;
- Establish a project to collect and analysis baseline data to allow the eventual physical determination of the composition of nut products for export. Until physical determination is feasible support is required for enterprises to obtain offshore chemical analysis.
- Ongoing support to enterprises to attend fine food fairs and other trade shows.
- Provide technical and financial assistance for enterprises to obtain food safety and HCAAP certification.
- Assist with the preparation of submissions to have the ban on the export nangae nuts lifted.

Capital investment

- Provide technical assistance to SPN/CS in preparation of an investment prospectus that can be utilized to attract joint venture partners.
- Establish a small Vanuatu specific challenge fund for rural enterprises based on the principles of the regional initiative but with simpler operating procedures.

The business enabling environment

- Initiate discussion with commercial banks to ensure that remote enterprises can take full advantage of the opportunities created by the internet and e-commerce.
- Continued lobbying for the repeal of the VCMB Act.

Enterprise and industry sustainability

- Contract VV to provide training of emerging marketing entrepreneurs

H. How might the initiative be managed?

In keeping with the private sector led philosophy to agricultural development that underpins this initiative it is proposed that implementation be through the sector itself.

Agribusiness in Vanuatu is represented by a number of special purpose nonprofit organizations, with the Syndicat Agricole being the oldest and broadest based. The Syndicat, which functions as an agriculture chamber, nominally represents all elements of commercial agriculture. Historically the focus of the Syndicat has been on larger beef cattle interests, but in recent years focus has been considerably broadened to address other areas, including high value crops and services to smallholders. Thus it is recommended that consideration be given to implementation of pilot initiative by the Syndicat, with the necessary organizational and technical support being provided. It is suggested that oversight for the initiative be provided by AusAID Governance for Growth Program.

VI. PROPOSED NEXT STEPS

The conclusion of this pre-feasibility assessment is that the proposed pilot initiative is worthwhile and could make a significant contribution to pro-poor growth in Northern Vanuatu. It recommended that AusAID now proceed with the design phase of this initiative. The undertaking of an additional feasibility study is not deemed to be warranted.

Table 1: A Summary of Selected Enterprises Considered

	South Pacific Nuts/Kava Store (SPN/KS)	Nuts n’Oils Malukula (NOM)	Venui Vanilla (VV)	CL Agencies (CLA)	Vanuatu Copra and Cocoa Exporters Ltd.(VCCE)
Enterprise location	Port Vila with a proposed relocation to Luganville Santo	Lakaturu Malekula (relatively isolated)	Venui South Santo (relatively isolated)	Luganville Santo	Luganville Santo
Ownership and management	<ul style="list-style-type: none"> ▪ Owned and managed by Charles Long Wah as a sole proprietor. ▪ Operates two trade names South Pacific Nuts (SPN) and the Kava Store (KS). ▪ A long standing business that is credited with facilitating the commercial development nakamal kava and peanut trade in the immediate post-independence period. ▪ Charles Long Way is a self taught, recognized authority, on the village level processing of nuts and fruit 	<ul style="list-style-type: none"> ▪ Ownership by the family of Bruce Hannent (Managing Director) who is based in Malekula. Hisson located in Vila is directly involved in marketing and in securing market information. ▪ A newly established business with 17 m vatu already invested. ▪ NOM emerged out of Bruce Hannent’s 5-years experience as manager of the Metenessel cocoa project on Malekula. And long previous experience as a manager. ▪ 	<ul style="list-style-type: none"> ▪ Majority shareholding by the family of Piero Bianchessi. Minority shareholding by LCM (a Santo business). ▪ A mature enterprise with a proven track record that commenced operations in 1987. ▪ Bianchessi is an Italian citizen and a chemist by training 	<ul style="list-style-type: none"> ▪ Owned by Clair Donic. Operated the Santo Oil mill on behalf of the COPV Receivers. CLA negotiating to purchase COPV from the them. ▪ Commenced operating the Santo mill in May 2007, after trading in copra in Vanuatu for 16 years. ▪ The performance of CLA has been a major contributing factor in restoring the fortunes of the coconut industry 	<ul style="list-style-type: none"> ▪ A joint venture between Sethy Luwi William (25%) and Holland International (75%). ▪ Commenced operations in 2003. ▪ Sethy William was previously marketing manager for VCMB. ▪ Holland International is Australian based international commodity trader also active in Solomon Is and PNG.
Core business of enterprise	Kava processing and the manufacture of wide range packaged processed nut and fruit products:	Manufacturing and wholesaling nut products: <ul style="list-style-type: none"> ▪ dried nangae nut kernel ▪ nangae nut oil 	<ul style="list-style-type: none"> ▪ Buying, processing, and wholesaling spice products, mainly vanilla and pepper. Most of 	Manufacture of crude coconut oil for export to European markets. Coconut meal	Exporting copra, cocoa and kava. Has purchased land in Santo to

	<ul style="list-style-type: none"> ▪ indigenous nuts ▪ peanuts ▪ various tropical fruits ▪ chillie and tamarind <p>SPN products are sold to retail outlets in Port Vila – some bulk sales to hotels, restaurants. Some exports to New Caledonia</p>	<ul style="list-style-type: none"> ▪ tamanu oil ▪ virgin coconut oil ▪ cocoa butter <p>Products largely exported via Volcanic Earth in Vila and Valele Trust in Luganville</p>	<p>putup is organically certified.</p> <ul style="list-style-type: none"> ▪ Exports over 90% of business – almost entirely wholesale bulk packs (regulatory requirements increasingly make the export of packaged retail products difficult. ▪ Retailed packaged products sold on the local (tourist) market. 	<p>exported to New Zealand. Plans to invest in new machinery including oil refining capacity.</p>	<p>establish an oil milling operation.</p>
Rural areas where raw materials are purchased	<p>From most areas, with the emphasis</p> <ul style="list-style-type: none"> ▪ Nangae (South West Bay Malekula/Paama, Banks and Torres) ▪ Kava (Pentecost) ▪ Navele (Ambrym) ▪ Natapoa (Malekula/Paama) ▪ Fruit (Efate) 	<p>All of Malekula, particularly North East – with some purchases intended from Ambrym.</p>	<p>South Santo and West Santo, South Malo, North/North West Ambae and East Ambae, and South Tanna, Aneityum</p>	<p>All the coconut growing areas of Northern and Central Vanuatu (Santo, Malo, Malekula, Epi, Ambrym, Ambae and Banks/Torres)</p>	<p>All the coconut growing areas of Northern and Central Vanuatu (Santo, Malo, Malekula, Epi, Ambrym, Ambae and Banks/Torres)</p>
Number of farm households deriving income from the enterprise	<p>In 2002, 3,000 to 5,000 households</p> <p>Number now halved due to the break down in rural communication</p>	<ul style="list-style-type: none"> ▪ 200 households (100 nangae and 100 tamanu) 	<ul style="list-style-type: none"> ▪ over 300 households of which 100 are in the remote locations of Ambae, Malo and Aneityum 	<p>15,000 plus households, of 3,000 to 4,000 classified as remote locations</p>	<p>10,000 plus households of which 2,000 to 3,000 classified as remote</p>
Income paid to rural household	<ul style="list-style-type: none"> ▪ In 2002 an estimated 22 m vatu paid to rural households, with an approx break down: Kava (10 m); Nangae (6m); Navele (1m); Natapua (.5m); Chillie (2m); Vanilla (1m); Fruit (1.5m) ▪ Number have now halved 	<p>Since June 2007</p> <ul style="list-style-type: none"> ▪ 8 tonnes of raw tamanu kernel (700,000 vatu) ▪ 11 tonnes of nangae kernel (2.8 m vatu) 	<p>In 2007</p> <ul style="list-style-type: none"> ▪ Vanilla 6.6 million vatu – (approx half to the isolated areas of Ambae and Aneityum) ▪ Pepper 700,000 vatu 	<p>Between May 2007 to Feb 2008 28 17,841 tonnes of copra purchased, for which 582.7 m vatu paid</p>	<p>For 2007</p> <ul style="list-style-type: none"> ▪ 9,401 tonnes of copra (282 m. vatu paid). ▪ 960 tonnes of cocoa (129.6 m. paid) ▪ 100 tonnes kava (100 m.

	due to the breakdown in rural communications				vatu paid). Total paid 511.6 m. vatu
Enterprise vision and goals to achieve pro-poor outcomes	<p>SPN's Vision is:</p> <ul style="list-style-type: none"> ▪ Establishing a multi product (nuts, fruit and kava) processing facility in Santo . ▪ The facility to focus on supplying the local market for the first 3 to 4 years, then extend exporting to New Caledonia, then beyond. ▪ The facility seen as a training center for agro-processing in the region. 	<p>NOM's Vision is:</p> <ul style="list-style-type: none"> ▪ Establishing a sustainable oil processing industry on Malekula based on: <ul style="list-style-type: none"> ○ Tamanu oil (for cosmetic and pharmaceutical uses) ○ Nangae nut oil (for cosmetic, pharmaceutical and food uses) ○ Virgin coconut oil (for cosmetic and food) ○ Cocoa butter 	<p>VV's Vision is:</p> <ul style="list-style-type: none"> • A sustainable Vanuatu spice industry based on the export of premium quality vanilla and pepper products. • VV would like to see the entry of other enterprises that can successfully market Vanuatu spices 	<p>CLA's goal is:</p> <ul style="list-style-type: none"> • To establish a commercially viable enterprise based on expansion of coconut oil exports from Vanuatu (including refined oil). 	<p>VCCE'S goal is:</p> <ul style="list-style-type: none"> • To transform the enterprise from a exporter of copra to exporter of coconut oil.
Expected pro-poor outcomes	<p>SPN projections from Santo processing facility:</p> <ul style="list-style-type: none"> ▪ supplied by up to 10,000 rural households; ▪ value of nuts purchased, 10 m vatu after 5 years and 39 m after 10 years ▪ value of kava purchased, 36 m vatu after 5 years and 69 m after 10 years ▪ value of fruit purchased, 5 m vatu after 5 years, 10 m vatu after 10 years 	<p>NOM projections for tamamu and nangae nut oil industry</p> <ul style="list-style-type: none"> ▪ 50 tonnes of raw tamanu kernel sourced from 300 households valued at 4.5 m. ▪ 55 tonnes of nangae kernel sourced from 400 household valued at 13.5 million 	<p>VV projections for a sustainable commercial spice industry</p> <ul style="list-style-type: none"> ▪ 600 household including 500 in isolated location. ▪ Value of income to rural households 10 to 20 m vatu (depending on world market conditions) 	<p>CLA projects with the proposed investment buying copra from 15,000 to 20, 000 rural households:</p> <ul style="list-style-type: none"> ▪ more volume leads to improved shipping. ▪ more value added increasing grower prices. 	<p>VCCE projects with the proposed investment buying copra from 10,000 to 15, 000 rural households:</p> <ul style="list-style-type: none"> ▪ more volume leads to improved shipping. ▪ more value added increasing grower prices
Identified constraints to achieving pro-poor outcomes	<p><u>Sourcing raw materials</u></p> <ul style="list-style-type: none"> ▪ High cost shipping raw materials to Vila (will be partially overcome by centering processing facility in Santo.) ▪ Breakdown in 	<p><u>Sourcing raw materials</u></p> <ul style="list-style-type: none"> ▪ High overhead costs of sourcing from remote areas, difficulty in getting information to farmers on supply and quality requirements. 	<p><u>Sourcing raw materials</u></p> <ul style="list-style-type: none"> ▪ High overhead costs of sourcing product from remote areas - high cost of buying operations. ▪ The high overhead cost of maintaining organic 	<p><u>Sourcing raw materials</u></p> <ul style="list-style-type: none"> ▪ Replanting required as outlined in the AusAID funded 2007 Coconut 	<p><u>Sourcing raw materials</u></p> <ul style="list-style-type: none"> ▪ Replanting required ▪ Copra quality needs improvement .

	<p>communication with the loss in the radio service and telecommunications (likely to be significantly overcome by entry of the Digicel mobile phone service and restoration of radio services)</p> <p><u>Processing expertise and information</u> SPN's renowned village level processing techniques will need adaptation by specialized food processing expertise for Santo the food processing facility. A particular need will be efficient access to laboratory and analytical facilities.</p> <p><u>Marketing and market access</u> Laboratory testing and food safety certification will become constraint to the development of export markets for packaged retail products</p>	<p>Difficulty in drying nuts in villages</p> <ul style="list-style-type: none"> ▪ Obtaining organic certification for growers, particularly those in remote locations. ▪ Resolving the problem of organic certification for gathered products <p><u>Processing expertise and information</u> Lack of:</p> <ul style="list-style-type: none"> ▪ ongoing technical information on the processing of little known oils (nangae and tamanu); ▪ information on sourcing appropriate equipment; ▪ of efficient access to laboratory and analytical facilities. <p><u>Marketing and market access</u></p> <ul style="list-style-type: none"> ▪ Export markets have little knowledge of nangae and tamanu, creating a disproportionate demand on product promotion. ▪ Lack of precise verifiable information on the favourable characteristics of the specialty products on offer ▪ The ban on export nangae nuts as food into the EU. ▪ Difficulty in obtaining information on regulatory requirements for export and certification requirements for market 	<p>certification for growers.</p> <p><u>Processing expertise and information</u></p> <ul style="list-style-type: none"> ▪ Despite Bianchessi's impressive development of world class products at considerable cost, there is still a need for ongoing access to technical information ▪ The cost effective securing of timely analytical information <p><u>Marketing and market access</u></p> <ul style="list-style-type: none"> ▪ Disproportionate high number of buyers are required to sell modest volumes of niche wholesale products. ▪ The need to maintain an ongoing presence at fine food fairs – aid donors not willing to provide this ongoing support to attend these high cost events. ▪ Increasing marketing requirement for food safety certification. ▪ Inability of Vanuatu's commercial banks to facilitate with website 	<p>Industry Study.</p> <ul style="list-style-type: none"> ▪ Copra quality needs improvement CLA can manufacture dryer flues (looking to government or a donor to supply the steel) <p><u>Processing expertise and information</u> Cost effective access to certified analytical laboratory facilities</p> <p><u>Marketing and market access</u></p> <ul style="list-style-type: none"> ▪ Increasing market demand for refined oil necessitates investment in refining capacity 	<p><u>Processing expertise and information</u> Cost effective access to certified analytical laboratory facilities will be required</p> <p><u>Marketing and market access</u></p> <ul style="list-style-type: none"> ▪ Increasing market demand for refined oil
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		<p>access</p> <p>Securing organic certification is necessary for market access.</p> <ul style="list-style-type: none"> ▪ Obtaining HCCAP and quality certification is becoming necessary for some buyers. ▪ Fair trade certification would be a marketing advantage if it can be realistically obtained. 	<p>credit card payments.</p>		
	<p><u>Capital investment and financing</u></p> <ul style="list-style-type: none"> ▪ Capital cost of establishing a processing facility in Santo (estimated at AUD 3 m.): <p>difficulty in attracting investment capital for it</p> <ul style="list-style-type: none"> ▪ Sole proprietor unwilling to make a substantial financial contribution (but. Long Wah willing to provide intellectual capital and management.) ▪ Unlikely that the roject would satisfy the requirements of the AusAID Enterprise Challenge Fund requirement. <p><u>The Business Enabling Environment (BEE)</u></p> <p>No apparent issues</p>	<p><u>Capital investment and financing</u></p> <ul style="list-style-type: none"> ▪ Need to build a custom build certified facility with the necessary machinery (expellers, filtration, driers, storage tanks, and cool room) Estimated cost around AUD 300,000. ▪ Project well suited to ECF funding, but NOM may find it difficult to meet the difficult documentation requirements of the ECF. ▪ Difficulty in sourcing ongoing working capital for purchase of raw materials from farmers <p><u>The Business Enabling Environment (BEE)</u></p> <ul style="list-style-type: none"> ▪ Absence of Customs and Quarantine satisfactory services on Malekula. ▪ No internet access on Malekula and poor telecommunications generally 	<p><u>Capital investment and financing</u></p> <ul style="list-style-type: none"> ▪ A modest expansion of factory and facilities required. Scale probably not sufficient to warrant a ECF proposal. ▪ HCAAP food safety certification required for existing premises. ▪ Difficulty in sourcing ongoing working capital for purchases from farmers – a particular problem for vanilla that can require extended periods in storage due to the extreme volatility in the market. <p><u>The Business Enabling Environment (BEE)</u></p> <ul style="list-style-type: none"> ▪ Commercial banks inability to provide for credit card payments to Vanuatu for internet sales. ▪ The ever present threat that the Vanuatu 	<p><u>Capital investment and financing</u></p> <ul style="list-style-type: none"> ▪ Present equipment old – resulting in low oil recovery level and high energy use. Total cost of required investment AUD 2 m, AUD 2.5 m. if the refinery included. ▪ Project highly amenable to ECF funds provided CLA able to purchase COPV from the Receiver. <p><u>The Business Enabling Environment (BEE)</u></p> <ul style="list-style-type: none"> ▪ A 3,000 vatu/tonne subsidy through the VCMB is 	<p><u>Capital investment and financing</u></p> <ul style="list-style-type: none"> ▪ A small mill producing crude oil is proposed. Capital cost estimated at approx 75 m vatu. Also investment in copra storage facilities required – estimated cost 20 m vatu. Project well suited to the ECF. <p><u>The Business Enabling Environment (BEE)</u></p> <p>No apparent issues</p>

	<p><u>Enterprise and industry sustainability</u></p> <ul style="list-style-type: none"> ▪ The industry is wholly dependent on Charles Longwah. ▪ SPN in its current form is in decline and has a current time frame of no more than a few years. ▪ The survival of the industry depends on the transfer Charles Longwah's intellectual capital to a sustainable business form that requires the substantial investment of investment capital. 	<p><u>Enterprise and industry sustainability</u></p> <ul style="list-style-type: none"> ▪ In the start-phase not yet a major issue 	<p>Commodities Marketing Board (VCMB) will declare vanilla and spices as prescribed commodities – which for these specialized niche products would herald the death knell of the industry</p> <p><u>Enterprise and industry sustainability</u> Vanuatu has developed a significant vanilla export industry based on a reputation of premium quality. Currently this industry is entirely dependent on the marketing expertise and the niche markets developed by VV. Realistically there is a 5-year time for the achievement of a sustainable spice export industry.</p>	<p>given to the 3 other companies that purchase copra - discrimination that threatens the survival of CLA.</p> <p><u>Enterprise and industry sustainability</u> High level of key person dependency in CLA, though the barriers to entry to bulk coconut manufacturing are far less for specialized marketing businesses.</p>	<p><u>Enterprise and industry sustainability</u> Less key person dependency due to majority shareholding by an international commodity trader</p>
<p>Proposals for enterprise focused measures to achieve pro-poor outcomes.</p>	<p><u>The efficient source of raw material</u> Locating the manufacturing facility in Santo and the likely improvement in telecommunications will facilitatesupply of raw materials by farmers.</p>	<p><u>The efficient source of raw material</u></p> <ul style="list-style-type: none"> ▪ Employment by the entrepreneur of a field officer with a particular emphasis of servicing more isolated locations, funding being proposed for the first two years. Providing information on appropriate organic certification needs and requirements. ▪ Assistance in meeting the 	<p><u>The efficient source of raw material</u></p> <ul style="list-style-type: none"> ▪ (As for NOM) meet the cost of a field officer employed by the enterprise for a period of two years with a particular emphasis of servicing more isolated. ▪ Training for organic certifiers 	<p><u>The efficient source of raw material</u></p> <ul style="list-style-type: none"> ▪ Not likely to benefit significantly from a single field officer. Would benefit from a general upgrading of the government extension service. 	<p><u>The efficient source of raw material</u></p> <ul style="list-style-type: none"> ▪ Not likely to benefit significantly from a single field officer. Would benefit from a general upgrading of the government extension service.

	<p><u>Sourcing processing expertise and information</u></p> <ul style="list-style-type: none"> ▪ Could benefit from on going technical advice on food processing and packaging. <p><u>Marketing and market access</u></p> <ul style="list-style-type: none"> ▪ Provide assistance with design and use if a good web site for retailing these niche products on export markets. (not required for several years) ▪ Assistance in labeling and bar coding requirements for export markets. ▪ Facilitating submissions for the removal of the ban on the importation of Pacific Island indigenous nuts under the EU Novel Food Act. ▪ Assistance in securing HCCAP and Food Safety Certification 	<p>initial overhead cost of organic certification.</p> <p><u>Sourcing processing expertise and information</u></p> <ul style="list-style-type: none"> ▪ Provide for the immediate priority need of ongoing expert technical advice on the processing and handling of specialty oils. <p><u>Marketing and market access</u></p> <ul style="list-style-type: none"> ▪ Resources required to promote little known products ▪ Support for confirmatory research into the properties of nangae and tamanu oil. ▪ Support for the collection of baseline data for eventual physical determination of the composition of nut products for export. (The same methodology that can now be used for kava in Vanuatu) ▪ Support for the offshore chemical testing in advance of physical determination being feasible . ▪ Assistance in securing appropriate certifications for market access: <ul style="list-style-type: none"> - HCCAP and quality certification - Organic certification - and if possible "Fair Trade Certification" ▪ Assistance in the 	<p><u>Sourcing processing expertise and information</u></p> <ul style="list-style-type: none"> ▪ Would benefit from on going access to a technical advice facility. <p><u>Marketing and market access</u></p> <ul style="list-style-type: none"> ▪ Ongoing support for a VV presence at fine food fairs. ▪ Continued support for the organic certification program . ▪ Assistance with HCCAP and food safety certification for VV processing facilities. ▪ Assistance in resolving the difficulty of credit card payment to Vanuatu with web site sales. ▪ Support for the collection of baseline data for eventual physical determination of the composition of export consignments. There a particular interest in being able to measure the vanillin content of vanilla and the pepperin content of pepper. 	<p><u>Sourcing processing expertise and information</u></p> <ul style="list-style-type: none"> ▪ Little need - requirements are well known. <p><u>Marketing and market access</u></p> <p>No specific needs identified for bulk coconut oil</p>	<p><u>Sourcing processing expertise</u></p> <ul style="list-style-type: none"> ▪ Little need - requirements are well known <p><u>Marketing and market access</u></p> <p>No specific needs identified for bulk coconut oil</p>
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	<p><u>Capital investment and financing</u></p> <ul style="list-style-type: none"> The establishment of the Santo factory needs to attract an investment of approx AUD 3 million. Assistance required in the preparation of a detailed project proposal and feasibility study to attract a suitable investment partner. <p><u>The BEE</u> Nothing specifically proposed</p> <p><u>Enterprise survival and industry sustainability</u> Attracting investment in the Santo food processing facility will enable the sustainability of</p>	<p>preparation of appropriate web site, with-commerce capability.</p> <p><u>Capital investment and financing</u></p> <ul style="list-style-type: none"> Approx AUD 300, 000 required to establish a suitable processing facility on Malekula. NOM intending to prepare an ECF proposal for this investment. Consideration should be given to establishing a Vanuatu specific challenge fund to agro-processing (as proposed in the Coconut Industry Review) <p><u>The BEE</u> Advice to Gov on the need to establish Custom and Quarantine services in Malekula.</p> <p>Repeal of the VCMB Act to remove the risk of spices becoming prescribed commodity</p> <p><u>Enterprise survival and industry sustainability</u> Not yet an issue for this new enterprise and industry</p>	<p><u>Capital investment and financing</u></p> <ul style="list-style-type: none"> Assistance in obtaining HCAAP and food safety certification required for existing premises. Consideration should be given to establishing a Vanuatu specific challenge fund to agro-processing (as proposed in the Coconut Industry Review) <p><u>The BEE</u> Initiate discussions with the commercial banks on the need to fully establish e-commerce.</p> <p>Repeal of the VCMB Act to remove the risk of spices becoming prescribed commodities</p> <p><u>Enterprise survival and industry sustainability</u></p> <ul style="list-style-type: none"> Sustainability has become a major issue. <p>Have VV do under contract in Vanuatu what it has done in</p>	<p><u>Capital investment and financing</u></p> <ul style="list-style-type: none"> Approx AUD 2.5 to replace existing mill equipment and to add oil refining capacity. CLA in the process of preparing an ECF proposal for this investment. Consideration should be given to establishing a Vanuatu specific challenge fund to agro-processing (proposed in the Coconut Industry Review) <p><u>The BEE</u> Ongoing representation for government to cease discrimination in the coconut industry.</p> <p><u>Enterprise survival and industry sustainability</u> A high level of key person dependency exists for enterprise – but less an issue for</p>	<p><u>Capital investment and financing</u></p> <ul style="list-style-type: none"> Approx AUD 1.2 required in establishing milling and storage capacity. VCCE intends preparing an ECF proposal for this investment. Consideration to be given to establishing a Vanuatu specific challenge fund to agro-processing <p><u>The BEE</u> Ongoing representation for government to cease discrimination in the coconut industry.</p> <p><u>Enterprise survival and industry sustainability</u> Not seen as an issue.</p>
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	fruit and nut processing capability		Solomon Is. for AusAID, training islanders to eventually become marketing entrepreneurs. Training includes hands on training in all aspects of the spice industry supply chain. Trainees would also go to the market place and meet potential buyers and familiarize themselves with their requirements.	the copra industry as whole, particularly if VCCE establishes copra oil mill.	
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VII. ANNEXES

A. Background details on the agro-processing enterprises

1. Venui Vanilla Co. Ltd.

Soon after he began growing vanilla on Espiritu Santo, it became apparent to Piero Bianchessi that a viable sales structure needed volume greater than his own production. In 1995 he began buying vanilla from a handful of growers on nearby Malo island. Since then the business has grown and diversified into other spices. In 2007 a peak production of three tones of vanilla from all sources was reached. Now, vanilla plantings on other islands, notably in the south of Vanuatu, will soon come into full production, further swelling the volume for sale. In 2007 his company, Venui Vanilla Co. Ltd., also had one tonne of pepper for sale, besides much smaller quantities of ginger, chillis and tumeric.

The company's annual purchases from more than 300 smallholder growers amount to some VT 9 million for vanilla and VT 1 million for pepper.

Operations Hitherto

Some of the production of vanilla and pepper is certified as organic and the spices are offered in a variety of forms (Table 1). For retail sales, packaging has been developed into a range of pleasing, tasteful presentations.

Table 1. Venui Vanilla Products

Packaging Type	Vanilla	Pepper	Other Spices
Bulk	Premium vanilla beans Short vanilla beans Essence quality beans Extract Ground beans Paste	Black peppercorns White peppercorns Cracked peppercorns	Ground ginger Ground tumeric
Catering	Beans Extract Ground beans Paste	Black peppercorns White peppercorns Cracked peppercorns Green peppercorns	Ground ginger Ground tumeric Ground chilli
Retail	Beans Extract Ground beans Paste	Black peppercorns White peppercorns Cracked peppercorns Green peppercorn paste	Ground ginger Ground tumeric Ground chilli Chilli paste
	Small gift baskets are an especial offering and come in four packs – premium vanilla beans and extract, mixed dry spices, white and		

	black whole pepper, green pepper in brine and as paste.
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Organic certification is controlled by AgriQuality, New Zealand (IFOAM accredited) and internal control has been carried out with the assistance of a local NGO, the Farm Support Association (FSA), supported by aid funds. FSA's activities included not only inspection and liaison with smallholder growers but also active technical advice to growers on growing and curing. There has been a progressive raising of standards as growers become familiar with requirements, such that some have lost their certification for not meeting standards. In the present annual inspection, more may do so. The number of certified growers is likely to vary between 120 and 150.

Vanilla and pepper are also bought from some 200 non-certified growers. This is partly because, the logistics of certification on islands being expensive, certification is only in places where a sufficient concentration of growers makes it practical. Most of the recent plantings are on islands not yet included in the organic network and although they raise the number of growers in Vanuatu by about 25% to near 1000, there may well be attrition in numbers. Production is price-sensitive. The new plantings were in response to a sudden increase in world price which later fell sharply to a low level. Although there are now signs of a modest recovery in the price, many growers may abandon their plantings. It is thus difficult to predict production but the volume handled by Venui Vanilla and the number of growers benefitting could well double in the short to medium term.

Table 2. Current Vanilla Prices Paid, Vatu per Kg.

	Organically Certified	Non-organic
Premium grade	4000	3000
Essence grade	3200	2400

The vanilla prices currently offered to farmers are at Table 2. With the present weak world demand, these represent a loss for Venui Vanilla but they are near the minimum prices at which growers are willing to produce. With large unsold stocks on hand, the company is restricting buying to the highest grades. In a highly competitive world market in which new grower countries have vanilla to sell, ongoing sales are intensely dependent on standards and continuity of supply. While the company has constantly upgraded its output in terms of quality, presentation and market search and delivery, this process must continue.

Trade in pepper is much less than in vanilla, partly because growers see it as a less lucrative crop. Although the company has been buying at VT 550 per Kg. which is at or above world price, farmers consider this marginal. The price structure is shown however by a Hawaiian offer of USD 5.00 per Kg for a one tonne consignment whereas for Venui Vanilla, preparation, packaging and consignment would bring the cost to USD 9.00 per Kg. Until growers accept a price of VT 200 – 250 per Kg, bulk sales of pepper cannot be profitable and sales are restricted to retail and some catering packages.

Apart from the small local market, the outlets for retail packages are largely restricted to niche markets in New Caledonia and Australia. There is also some movement of gift packs sold on the internet but the export market is essentially limited to the larger (vacuum packed and nitrogen-flushed) bulk and catering packages. The difficulty and cost of transport and of freight and other costs make it impractical for Venui Vanilla to compete on overseas retail markets where buyers prefer to packages for their own markets. This marketing picture is the result of persistent and dedicated promotion at food fairs, cultivating industry contacts and, in the past year, the setting up of a website that takes three to four genuine and worthwhile hits per month.

Perceived Requirements

Buying from growers, Mr Bianchessi has opportunist competitors, none of whom have invested in the sophisticated developmental work of Venui Vanilla. The company is the reliable anchor of the infant spice industry in Vanuatu but it and the industry are vulnerable to retreat or even failure without ongoing development. Of mature years, Mr Bianchessi is well aware that there ought to be provision for continuance of the industry, less dependent on him. For it to be firmly based, however, transformations are needed in the areas of training, promotion and food standards and certification.

Training

Spice-growing is relatively new in Vanuatu, so that there is only a very restricted cadre of knowledgeable, experienced people. On-the-job (rather than formal) training will be crucial for any expansion and most of this training will have to be done by Mr Bianchessi.

Venui Vanilla needs a field officer to handle liaison with growers, including buying. This person might with further training take over other functions and in effect become an assistant manager.

There will also be a need for training of inspectors for the internal control of organic certification. So far, this has been carried out by FSA but that organization has growing obligations in other areas of activity and Venui Vanilla will probably need to have the internal control under its more direct supervision. How this need can be met in practice is at yet unclear but with the growing need for certification in a variety of products, a body jointly operated with other, similar, enterprises may be feasible.

Perhaps more important for the long-term continuation of the industry is a third training program that Mr Bianchessi has in mind. This is for him to train (say) two ni-Vanuatu, one from Ambae island and one from Tanna island in the south, to be buying agents who will later become independent operators, buying and marketing in their own right. Their training would include not only a thorough grounding in quality standards and packaging and marketing operations but also accompanying Mr Bianchessi to food fairs so as to become familiar with the nature of the market and make industry contacts.

Promotion

Now that Venui Vanilla has its own website and its product range is set, and with market competition intensifying, the company needs to embark on a renewed program of promoting its products. Especially, this will entail exhibiting at food fairs in Europe, Asia and Australasia, along with pursuit of niche market openings. In earlier years the

company exhibited at fairs as the opportunity for funding arose but it needs now to launch an ongoing program not dependent on intermittent assistance, one in which exhibiting and other market development on the one hand, and the website on the other, reinforce each other.

Standards and Certification

Organic certification procedures are in place and provide a basis for market access but food standards in buyer countries are becoming more rigorous. Venui Vanilla should be pro-active in obtaining certification under food safety regulations in target countries. This will be costly. It may require upgrading the company's (already hygienic and orderly) processing and packaging facility. It will also require a means of obtaining analyses of products, possibly batch by batch. The company, as well as other processors, can expect that in the future they will need access to laboratory testing for chemical components, including contaminants.

Resumé

Venui Vanilla has brought a rare degree of competence and probity to a new industry that without it would have floundered, if not actually floundered. Having overcome a myriad of difficulties ranging from narrow grower perspectives to the development of sophisticated product presentation, it is well placed to be the flagship in securing a solid and forward-looking spice industry – a work that is incomplete and ongoing. The company needs an injection of capital for the further development here outlined.

2. Nuts'N'Oils Malekula

Located at Lakatoro, north Malekula island, this is a new enterprise owned and run by Bruce Hannent. He brings to it wide managerial experience in Australia, Papua New Guinea, the U.K. and Vanuatu. In the tropics his experience in management of agricultural production has included cocoa, copra, coffee, beef, tea and other products and he has managed a retail outlet for meat, fish and other foods. Most recently he is nearing the end of a five-year management contract at Metenesel Estates, a 500-hectare cocoa plantation near Lakatoro, where he began diversification into other production. Living on north Malekula, he saw the possibilities for developing local products and after two years of research began operations in the latter part of 2007.

Aside from a minor trade in vanilla beans, Nuts'n'oils has four products: nangae (both nuts and oil), tamanu oil, virgin coconut oil and cocoa butter. On making it known that it would buy nangae and tamanu nuts from villagers, the company was swamped and now has considerable stock to move. Eleven tonnes of nangae nut kernels and eight tonnes of tamanu nuts were purchased from villagers in the first six months of operations. A total of VT 3.4 million was paid out to some 200 households.

Virgin coconut oil and cocoa butter are well-recognized products with established markets and will be a core for the business. Tamanu and nangae are less well-known and developmental but may ultimately become more important, both in total income and in benefit to the island population.

The Products

Nangae Nuts

In Vanuatu, 'nangae' refers to two species of *Canarium* trees, the nuts of *C. harveyi* being more oily than those of *C. indicum*. *Canarium* is indigenous from the Philippines to Polynesia and has been selected and cultivated over centuries. *C. indicum* is by far the more widely grown and throughout Melanesia has always been an important food source. It is planted more extensively on Malekula than on any other island of Vanuatu.

The mature nut has a hard shell and the edible kernel is 15-20% of the nut weight. Uncracked nuts keep for extended periods but immediately on cracking, oxidation begins so that kernels must be dried fairly quickly to avoid spoilage. Properly dried and roasted, the kernels are excellent eating. The flavour is delicate and distinctive, somewhat reminiscent of pine nuts, and the texture is soft with a slight crispness. The nutritional profile is very good. Confectioners who know the nut value it highly.

The nut's characteristics demand careful handling. The comparatively low yield of kernel-in-testa (KIT) from nut-in-shell (NIS), approximately one-sixth, means that unless nuts are cracked in villages and consigned to the processing centre as KIT, transport costs are high and cash returns low. But unless they are partially dried, KIT must be processed within a day or two. If brought down to 8% moisture they will keep for up to 7 days; at 4% moisture they will keep for several months, especially in cool storage. These quality considerations vitally affect the logistics of collection from villages.

Cold pressed from KIT, nangae oil has multiple uses. It is a high quality edible oil suitable for all culinary uses, it has application in cosmetics and it also has medicinal

properties. It contains a range of substances of varying density so that when it is left to stand over a period of months, the heavier fatty substances settle out, leaving a very pale yellow, light oil.

Only broad chemical analyses are so far available but it has been shown to contain levels of palmitic acid only exceeded by sweet almond oil. Palmitic acid being a known anti-inflammatory agent, the high levels of it may explain the anecdotal evidence of the oil being highly effective in alleviating swellings and possibly arthritis. One analysis also revealed a considerable level of Omega 6.

Tamanu Oil

This oil is the product of natural fermentation when the shells are removed from the nuts of tamanu (*Calophyllum inophyllum*), a seashore tree which is never cultivated. Harvested from the wild, the nuts are purchased in shell and during fermentation the oil content increases and the oil darkens. There is no standard point at which the oil is extracted (by cold pressing) so that yield, colour and presumably chemical composition vary. It is a mixture of oily substances and only sketchy chemical analyses are available.

Uses for the oil are pharmaceutical and cosmetic. There is much anecdotal evidence of its effectiveness in healing wounds and burns, in treatment of skin infections and in skin rejuvenation. Scientific evidence is very limited, indicative and inconclusive. It has long been used in traditional medicine and its properties are slowly becoming known.

The market is limited and purposeful development of it will depend on extensive chemical analysis and scientific assessment.

Virgin Coconut Oil

Virgin coconut oil is cold pressed from fresh coconuts (rather than from copra). Because caremalization begins as soon as the nut is opened, the very finest virgin oil comes from rapid processing, is colourless and has an aroma of fresh coconuts. Containing Omega 3 and Omega 6, it is becoming popular as a health tonic. It is also used in cosmetics.

Cocoa Butter

Cocoa butter is the fatty substances extracted from fermented cocoa beans. It is added to ground cocoa and sugar to make chocolate and it is also used in cosmetic and pharmaceutical preparations.

Operation Hitherto

Nuts'n'oils operates from a rented building but land had been acquired for building permanent premises. A high quality press capable of 250 – 300 litres per day is at present used for production of all oils but separate, dedicated presses are planned. Drying so far has been (apart from some sun drying and some use of a dehumidifier) by an electrically powered infra red dryer, but with the services of a New Zealand company a unit based on a modified dehumidifier is being developed. There is also a cool store facility. There is no nut cracking machinery but this is regarded as less important than

development of drying capability, especially since nangae nuts are usually purchased as KIT.

So far, quality ranging from acceptable to high has been achieved for the products but the aim is for higher, first-class quality. Central to this aim is the development of a drying regime flexible enough to handle all conditions and volumes of intake, which may mean a composite of methods.

An even greater priority is marketing, particularly of the two nangae products and tamanu oil. Mr Hannent has actively sought markets in Australia, New Caledonia and elsewhere. His son in Port Vila is also actively engaged in seeking out markets.

The Two Nangae Products

In the first season just finished, Nuts'n'oils bought eleven tones of nangae kernel (KIT) from about 100 households in the north of Malekula. Prices paid were graded according to moisture content:

% Moisture	Price, vatu per Kg
below 8	350
8-10	300
10-15	250
over 15	200

Kernels were brought to 4% moisture in approximately 48 hours, blanched (i.e., the papery testa removed) and stored in cool storage. Oil was cold pressed from some of the nuts and there are some 500 litres on hand.

The two products are of high quality but marketing is proving difficult. The nuts are scarcely known on the world market and have to compete with established products. Few local sales have been made but recently, significant trial orders were from New Caledonia were received and filled. Efforts to open markets in Australia have so far met only lukewarm responses. The oil is even less well-known and oil brokers have indicated that to break into the market, nangae oil will need to have some notable quality. It may have it in the fact of high levels of palmitic acid, which may render it very attractive for pharmaceutical purposes. To pursue that market, reliable chemical analysis is required and steps have been taken to have that done at Southern Cross University in northern N.S.W.. At the same time efforts are being made to find outlets in the cosmetic market, both on the internet and by personal representation.

There is no doubt that there is an abundant supply of nuts on Malekula. The quick sample survey carried out under this study suggests that there may be 75,000 trees, yielding perhaps 1250 tonnes of KIT annually. In the season just passed, Nuts'n'oils purchased less than 1% of this quantity. The crucial constraint is the finding of markets.

Tamanu Oil

From the tamanu nuts purchased (at VT 85 per Kg), three tones of oil have been sold and two are on hand. A large consignment was sold to USA through a trader on Espiritu Santo island. Sales have also been made to Volcanic Earth, a small Port Vila-based company producing high quality skin care products using sophisticated marketing methods.

There is likely to be a steady but not extensive sale of the oil. Market development will come to require chemical analyses and, later, establishment of standards for fermentation and consequent quality.

When buying extends over the whole of the island, the supply of nuts is likely to be up to 30 tonnes. If demand ever exceeds this supply, nearby islands (Ambrym, Epi) may add another 20 tonnes. For this product too, the constraint is not supply but the finding of markets.

Virgin Coconut Oil

The meat of fresh coconuts is partially dried in a dehumidifier before cold pressing the oil. There is an abundant supply of coconuts – from Metenesel Estates, nearby PRV Plantation and smallholders – and the choice of supply is largely governed by suitability for producing the highest quality virgin oil.

Only small quantities have been produced while techniques are being refined. Enquiries have been received (e.g., for 1000 litres per month to Vietnam) but actual sales have been only small quantities to Volcanic Earth for use in skin care products.

Cocoa Butter

The cocoa butter is extracted from cocoa nibs purchased cheaply from Metenesel Estates. (Nibs are broken pieces of fermented cocoa beans, unsaleable on world markets and usually discarded by plantations). Between three and four tones have been processed.

No sales have been made but possible buyers in New Caledonia have indicated that both quality and price are acceptable and at least equivalent to those from elsewhere.

Perceived Requirements

The most immediate and pressing need is to secure markets. For both nangae products and tamanu oil, an essential step is to obtain reliable chemical analyses. All of the products, to varying degrees, will then require more intense market research and promotion. Nangae nuts and oils will be the most difficult of these, but they are the ones that have the greatest potential for pro-poor benefit. The nangae nut is in a position similar to that of the macadamia nut decades ago and establishing on the market will be a long and costly process.

For the developmental products especially, investment in meeting food and health safety requirements will be required in the future and access to ongoing laboratory testing for components will be needed.

Nuts'n'oils has no organic or fair trade certification. Although in principle all the products are organic, certification as such may become necessary for market access.

Those considerations aside, the company will need capital investment for the permanent premises planned. A broad estimate of this requirement is AUD 250,000.

Resumé

Nuts'n'oils is in its earliest stages but it is already apparent that it will produce high quality products. The major difficulty is finding markets. In the cases of virgin coconut oil and cocoa butter, this is a matter of entry into an established trade. For the other products the task is more difficult, yet these are the ones that will have most benefit for the general population of the island.

Located as it is in a major production area, the company has advantages of supply but logistic disadvantages in delivering the finished products. But its very location means that it will carry the benefit of value-adding as far as possible into the rural communities.

3. South Pacific Nuts/The Kava Store

If there is one man above all others whose innovations have in recent decades enlarged the rural economy of Vanuatu, he is Charles Long Wah. It was his commercial impetus that established the peanut and kava trades which previously did not exist, and now kava is a major export. He then turned his attention to adding value to other agricultural products. A sole trader, he operates under two registered business names, South Pacific Nuts and Kava Store. In a lifetime in Vanuatu he has become a household word, known for a genuine desire for commercial development in rural communities.

Over the years his payouts to rural households have varied considerably, up to a peak of VT 22 million per annum. Over the years, thousands of households have benefited.

Operations Hitherto

At a time when telecommunications were very sparse in Vanuatu, radio ruled. It was a nightly occurrence to hear a spate of messages from Kava Store to farmers in the islands, ordering kava or peanuts to be sent on ships and detailing how payments were to be picked up. Farmers also came with their produce and sold in person. This method of sourcing produce was then used for indigenous nuts, while fruits and spices were generally purchased in person. When radio broadcasting ceased in 2002, the whole trade received a major blow. To some extent, better telecommunications offset the impact but the volume of business was reduced by half.

Kava remains a major part of the business but where once it arrived from almost all islands and was for the fresh kava trade to nakamals (kava bars), now it is exclusively from Pentecost island and is dried, powdered, packaged and sold through retail outlets. Peanuts too continue to be processed by the business. During the '90s, throughput of peanuts rose to 30 tonnes annually, two-thirds sold in shell and the remainder blanched or sweet-coated. As for kava, the trade is now shared with ni-Vanuatu entrepreneurs. In both cases, Kava Store showed the way and ni-Vanuatu businesses followed.

Mr Long Wah then branched into indigenous nuts – nangae (*Canarium* sp.), navele (*Barringtonia* sp.) and natapoa (*Terminalia* sp.), fruits (pawpaw, mango, pineapple, soursop, wild raspberries) and spices (vanilla, pepper, chillis and tamarind).

Nangae (Pili nut in Philippines, Java almond in Indonesia, Galip in PNG, Ngali in Solomon Is.) has been purchased from most of the islands of Vanuatu (Table 1), 80% from the north, where there is the greater supply and where the quality of the nuts also tends to be better. Because of the low yield of kernel to nut-in-shell (NIS) and the rapid spoilage after nuts are cracked (see Nuts'n'oils Malekula profile), the logistics of supply to Port Vila are difficult. Some kernels are air-freighted but spoilage still occurs, so that wastage is often high and emergency storage in freezers has to be used, causing further deterioration in this delicate nut. These are strong reasons for moving the business to Santo.

Table 1. Average receivals of nangae by South Pacific Nuts, tonnes p.a.

Island(s)	Nut in Shell (NIS)	Equivalent kernel-in-testa (KIT)
Banks & Torres	120	20
Malekula	180	30
Maewo	40	7
Pentecost	60	10
Santo	40	7
Ambae	30	5
Anbrym	20	3
Paama	6	1
Shepherd Is.	30	5
Epi	20	3
Efate	2)
Erramango	4) 1
Futuna	2)
Total	554	96

Note: Indicative figures only. Most of supply ex Malekula was from its south.

The nangae, salted or sugar-coated after sorting and roasting, are packed for retail sales and supply to the hotel and restaurant trade.

Mr. Long Wah has come to believe that the supply of NIS is, for the present at least, limited to about 600 tonnes NIS. (It was for this and other reasons that a sample survey was done. It showed that the resource was much greater. See Annex C.) This ceiling is evidently more a matter of organization and logistics than actual production, and exacerbated by the breakdown of radio broadcasting.

Navele (cut nut), purchased as sun-dried NIS, has at times exceeded nangae in volume of throughput. The island supplying most, Ambrym, has two active volcanoes that restrict the number of crops that can be grown, so that this nut is a welcome source of income. But that island and other major suppliers are also in the north and deliveries plummeted when radio broadcasting failed. Only VT 2 million was paid out in 2007 for navele. Natapoa, the third of the indigenous nuts. Is seasonal and the receivals have generally been about half those of navele, so that only about VT 1 million was paid out for natapoa in 2007. As for nangae, both these nuts are packed for retail sales, either salted or sugared. Again as for nangae, the sources of supply and difficulties of logistics point to moving the processing from Port Vila to Santo.

The various fruits are dried to a point where they can be eaten as confectionery. For retailing they are presented in a variety of selling lines, including individual wrapping in twists of decorative paper. Confectionery lines also include (marble sized) coconut balls, coloured or plain, in jars. Jams and chutneys are also made and retailed. Kava Store paid out VT 3 million for tropical fruits in 2007, to small holders on Efate. This part of the business, despite the comparatively large number of selling lines, is thus of modest importance in terms of pro-poor payments.

Payments for spices were more than double those for tropical fruits in 2007. Vanilla beans, peppercorns and dried chilli are offered in much plainer packaging than that of Venui Vanilla. Packaging, originally in hermetically sealed jars and cellophane or polythene bags, has evolved only modestly, mainly in more decorative labeling.

Behind this array of selling lines lies a prodigious amount of work. Starting with quite homely methods and self-taught, Mr. Long Wah has found solutions to a host of problems, to the extent that he has become recognized in the Pacific region as an authority on the processing of fruits and nuts, particularly as this may be applied to small scale operations manageable at the village level.

Perceived Requirements

If the business is to regain its former size and then grow, it must move to Luganville, Santo.

A factory at Luganville, built with export standards in mind, would cost an estimated AUD 3 million. His years now advancing, Mr. Long Wah is understandably unwilling to make such an investment himself, so that an investment partner (or partners) must be found. Mr. Long Wah needs assistance in finding such a partner, the first step being the preparation of a detailed proposal – in effect, a prospectus.

The requirements for such an installation have been prepared in outline but specialized expertise in food processing will be needed, both for detailed design and start-up. Included must be laboratory facilities and compliance with food standards in target export markets. New Caledonia is a likely market, especially for nuts, probably worth a minimum of VT 50 million. But its ambivalent status as a South Pacific entity that is legally part of France (and therefore the EU) may create difficulties in the future, in the area of food safety regulations. Packaging methods and presentation, labeling and bar coding will be necessary parts of a new and wider perspective for the business.

True to form, Mr. Long Wah envisages the proposed new factory as a regional centre for training Pacific islanders in food processing.

Resumé

Through the remarkable enterprise of one man, a business benefiting thousands of rural families has been built out of nothing but potential. Its continuation, transformed to rationalize its supply arrangements and to meet the demands of the future, is of major importance to the rural population of Vanuatu. The opportunity to build on Mr. Long Wah's knowledge and experience should not be lost.

Building a facility to handle kava, nuts and fruit in Santo will bring focus to all these trades, build a sound base for growth in the rural economy of the northern islands and allow many hundreds of families to regain the income lost since 2002, and much more.

B. Profile of the Syndicat Agricole

Its French name signals its origin but not its present character. 'The Syndicat' began as a farmers' union and it is approaching its centenary. Its character has changed as times have changed and where once its members were French planters and farmers, now over 90% of its membership are Melanesians. Its purpose however remains the same: promoting the interests of agriculture and agricultural producers. At heart it is practical: where once it imported agricultural machinery, breeding stock and even plantation workers from what is now northern Vietnam, now it sells farm supplies to its members at a low profit margin.

Although the Syndicat began as French and at times was subsidized by the French government, it was a creature of the Anglo-French condominium that ended in 1980. Then, at Independence, it was dominated by cattlemen, both French- and English-speaking, and held shares in the abattoir and now-defunct meat cannery on Efate island. Its membership and its outlook narrowed in politically uncertain times but then began to widen again and continues to.

The Syndicat is legally incorporated and its Articles specify that any profits may not be distributed to members but are to be used to promote agricultural industries. It is managed by a board of six, elected on a rotational basis at annual general meetings of members. It has a loyal core of about 400 members living on most of the islands, and a floating membership of hundreds more who might arrive to buy materials and nobody would deny their membership merely because they had not paid their annual subscription, because they were living far away and forgot. Its auxiliary members include the Department of Agriculture and Rural Development, the credit union, the REDI administration in three provinces. It owns its own substantial premises at Port Vila and Luganville and its finances are sound but unspectacular.

Increasingly, the Syndicat is accorded recognition by being represented on other bodies. The Act setting up the new agricultural bank specifies that one board member be nominated by the Syndicat. It is represented at the Vanuatu Agricultural Research and Technical Centre (VARTC), the Chamber of Commerce and various ad hoc committees such as steering committees for agricultural aid projects. From time to time it makes representations on such subjects as wage fixing and customs duties.

For most of its members, though, its purposes are tangible ones. Its trading supplies fencing materials, tools, livestock feeds, herbicides, poultry-raising supplies. It imports about 9000 day-old chicks each year and distributes them to small-scale poultry producers on many islands. It is an outlet for printed agricultural extension information. It will pay for the cattle semen to be imported to improve VARTC's Charolais herd. It provides facilities and administrative assistance to the Farm Support Association.

The Syndicat goes about its business quietly and although in some quarters its old colonial image dies hard, its hundreds of members know that it is there to serve and promote agricultural industries and farmers of all descriptions.

C. Indicative cash flow projections for SPF Santo Agro Processing Facility

Table 1 Capital and overhead costs starting a Santo based nut, fruit and spice processing facility

	AUD (,000)	VUV million
<u>Land and buildings</u>		
Land Acquisition	118	10.0
Building	588	50.0
Wharehousing	118	10.0
Manager and staff housing	118	10.0
Security house	24	2.0
Landscaping and fencing	62	5.3
Sub-total	1,027	87.3
<u>Equipment</u>		
Heat pump driers	71	6.0
dehydrators (20)	47	4.0
freezers	82	7.0
stainless steel tables	59	5.0
sinks	24	2.0
commercial gas oven	59	5.0
nut coating machinery (nagai)	47	4.0
nut coating machinery plus shaker (peanut)	47	4.0
laboratory and equipment	71	6.0
workers hygenic clothing	9	0.8
electronic scales	24	2.0
packaging equipment and initial stock of packing materials	235	20.0
labelling equipment	176	15.0
printing equipment	35	3.0
vaccum packing and ceiling equipment	47	4.0
consultancy services	71	6.0
vehicle	53	4.5
Office equipment	24	2.0
processing raw material stocks	24	2.0
miscellaneous equip*	176	15.0
food safety certification	29	2.5
company registration	2	0.2
Sub-total	1,411	120
Total start-up capital costs	2,438	207

* blender and slicers, grinders, oil press, sterilizers, stainless steel saucepan, ss strainers, utensils, drum rollers for spray coating nuts fruits and candies, choc melting equip, filling machinery, pounding equip, etc.

Table 2: Projected cash flow for processing facility

Nuts

Nangai (canarium)nuts (processing 8.6 tonnes of kernel increasing to 120 tonnes over a 10 year period)

Year	1	2	3	4	5	6	7	8	9	10	11
Revenue											
<u>volume of nangae nut products (kg)</u>											
50 gm sugar coated	300	1,000	1,300	1,690	2,197	2,856	3,713	4,827	6,275	8,157	10,604
50 gm salted	150	300	390	507	659	857	1,114	1,448	1,882	2,447	3,181
100 gm sugar coated	1,500	300	390	507	659	857	1,114	1,448	1,882	2,447	3,181
100 gm salted	750	1,200	1,560	2,028	2,636	3,427	4,456	5,792	7,530	9,789	12,725
250 gm sugar coated	1,250	3,000	3,900	5,070	6,591	8,568	11,139	14,480	18,825	24,472	31,813
250 gm salted	625	2,000	2,600	3,380	4,394	5,712	7,426	9,654	12,550	16,315	21,209
500 gram sugar and salted	1,000	2,000	2,600	3,380	4,394	5,712	7,426	9,654	12,550	16,315	21,209
1 kg plain frozen	1,000	2,000	2,600	3,380	4,394	5,712	7,426	9,654	12,550	16,315	21,209
5 kg plain frozen	2,000	3,000	3,900	5,070	6,591	8,568	11,139	14,480	18,825	24,472	31,813
Sub-total (kgs)	8,575	14,800	19,240	25,012	32,516	42,270	54,951	71,437	92,868	120,728	156,947
sub-total gross revenue	15,435,000	26,640,000	34,632,000	45,021,600	58,528,080	76,086,504	98,912,455	128,586,192	167,162,049	217,310,664	282,503,863
(@average selling price1800 vatu/kg)											

Navele (Barringtonia) nuts (processing 2.2 tonnes of kernel increasing to 14.5 tonnes over a 10 year period)

Year	1	2	3	4	5	6	7	8	9	10	11
Revenue											
<u>volume of navele nut products (kg)</u>											
50 gm sweet or salted	200	300	400	500	550	600	650	700	750	800	900
100 gm sweet or salted	1,000	2,000	3,000	3,500	4,000	4,500	5,000	5,500	6,000	6,500	7,000
250 gm sweet or salted	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,300
500 gm sweet or salted	200	300	400	450	500	550	600	650	700	750	800
1 kg natural	200	300	400	450	500	550	600	650	700	750	800
5 kg natural	100	200	300	350	400	450	500	550	600	650	700
Sub-total gross revenue	2,200	4,100	6,000	7,250	8,450	9,650	10,850	12,050	13,250	14,450	15,500
(@ av. Selling price 1000 vatu/kg)	2,200,000	4,100,000	6,000,000	7,250,000	8,450,000	9,650,000	10,850,000	12,050,000	13,250,000	14,450,000	15,500,000

Natapoa (Terminalia) nut (processing (200 kgs increasing to 4 tonnes over 10 years)

Year	1	2	3	4	5	6	7	8	9	10	11
Revenue											
<u>volume of natapoa nut products (kg)</u>											
50 gm sweet or salted	50	100	150	200	250	300	350	400	450	500	550
100 gm sweet or salted	100	200	300	400	500	600	700	800	900	1,000	1,100
250 gm sweet or salted	50	100	150	200	250	300	350	400	450	500	550
Sub-total gross revenue	200	400	600	800	1,000	1,200	1,400	1,600	1,800	2,000	2,200
(@ av. Selling price 1300 vatu/kg)	260,000	520,000	780,000	1,040,000	1,300,000	1,560,000	1,820,000	2,080,000	2,340,000	2,600,000	2,860,000

Peanuts (processing 2.1 tonnes increasing to 37 tonnes of 10 years)

Year	1	2	3	4	5	6	7	8	9	10	11
Revenue											
<u>volume of peanut nut products (kg)</u>											
50 gm sweet or salted	500	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	9,500
100 gm sweet or salted	500	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	9,500
250 gm sweet or salted	500	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	9,500
500 gm sweet or salted	200	400	800	1,200	1,600	2,000	2,400	2,600	3,000	3,400	3,700
1 kg natural	200	400	800	1,200	1,600	2,000	2,400	2,600	3,000	3,400	3,700
5 kg natural	200	400	800	1,200	1,600	2,000	2,400	2,600	3,000	3,400	3,700
Sub-total gross revenue	2,100	4,200	8,400	12,600	16,800	21,000	25,200	28,800	33,000	37,200	39,600
(@ av. Selling price 700 vatu/kg)	1,470,000	2,940,000	5,880,000	8,820,000	11,760,000	14,700,000	17,640,000	20,160,000	23,100,000	26,040,000	27,720,000
Total gross revenue from nuts	19,365,000	34,200,000	47,292,000	62,131,600	80,038,080	101,996,504	129,222,455	162,876,192	205,852,049	260,400,664	328,583,863
AUD equiv.	227,824	402,353	556,376	730,960	941,624	1,199,959	1,520,264	1,916,190	2,421,789	3,063,537	3,865,693

Kava products (processing 4.3 tonnes increasing to 35 tonnes over 10 years)

Revenue

volume of kava products (kgs)

50 gm kava tea (infusion peeled blanced)	50	100	150	200	250	300	350	400	450	500	500
100 gm kava tea (infusion peeled blanced)	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,500	5,500
250 gm kava tea (infusion peeled blanced)	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,000
500 gm kava tea (infusion peeled blanced)	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,000
750 gm kava tea (infusion peeled blanced)	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,000
1 kg kava tea (infusion peeled blanced)	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,500	5,500
5 kg kava tea	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,000
1 kg roots only	300	900	1,000	1,300	1,600	2,000	2,300	2,600	2,900	3,000	3,000
	4,350	8,000	11,150	14,500	17,850	21,300	24,650	28,000	31,350	34,500	34,500

Sub-total gross revenue

(@ av. Selling price 3000 vatu/kg)

	13,050,000	24,000,000	33,450,000	43,500,000	53,550,000	63,900,000	73,950,000	84,000,000	94,050,000	103,500,000	103,500,000
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Chilli products

Year

Revenue

volume of chilli powder (kgs)

	1	2	3	4	5	6	7	8	9	10	10
50 gm pack powder chilli	20	50	100	150	200	250	300	350	400	450	450
100 gm pack powder chilli	50	100	150	200	250	300	350	400	450	500	500
250 gm pack powder chilli	25	50	75	100	125	150	175	200	225	250	250
500 gm pack powder chilli	25	50	75	100	150	200	250	300	350	400	400
1 kg pack powder chilli	10	20	30	40	50	60	70	80	90	100	100
50 gm jar powder chilli	10	15	20	25	30	35	40	45	50	55	55
100 gm jar powder chilli	50	60	70	80	90	100	110	120	130	140	140
250 gm jar powder chilli	50	75	100	125	150	175	200	225	250	275	275
500 gm jar powder chilli	50	100	150	200	250	300	350	400	450	500	500
	290	520	770	1,020	1,295	1,570	1,845	2,120	2,395	2,670	2,670

sub-total gross revenue

(@ av. Selling price 2500 powder chilli/kg)

	725,000	1,300,000	1,925,000	2,550,000	3,237,500	3,925,000	4,612,500	5,300,000	5,987,500	6,675,000	6,675,000
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Pepper

Year	1	2	3	4	5	6	7	8	9	10
Revenue										
<u>volume of pepper (kgs)</u>										
50 gm pepper corn / powder	25	50	75	100	125	150	200	250	300	350
100 gm pepper corn / powder	100	150	200	250	300	350	400	450	500	600
250 gm pepper corn / powder	125	250	375	500	625	750	875	1,000	1,250	1,500
500 gm pepper corn / powder	250	250	750	1,000	1,500	2,000	2,500	3,000	3,500	4,000
1 kg pepper corn / powder	200	300	400	500	600	700	800	900	1,000	1,100
250 gm jar pepper corn / powder	25	25	75	100	150	200	250	300	350	400
100 gm jar pepper corn / powder	50	100	150	200	300	400	500	600	700	800
250 gm jar pepper corn / powder	50	75	100	125	150	175	200	225	250	275
500 gm jar pepper corn / powder	50	100	150	200	250	300	350	400	450	500
	875	1,300	2,275	2,975	4,000	5,025	6,075	7,125	8,300	9,525
sub-total gross revenue										
(@ av.selling price 1300 pepper corn powder/kg	1,137,500	1,690,000	2,957,500	3,867,500	5,200,000	6,532,500	7,897,500	9,262,500	10,790,000	12,382,500

Tropical fruits

Year	1	2	3	4	5	6	7	8	9	10
Revenue										
<u>Volume of tropical fruits, spices,coconuts</u>										
50 gm Preserved assorted fruits	50	75	100	125	150	200	250	300	350	400
100 gm Preserved assorted fruits	50	60	70	80	90	100	110	120	130	140
250 gm Preserved assorted fruits	25	50	75	100	125	150	175	200	225	250
50 gm Fruits Candies	50	75	100	125	150	200	250	300	350	400
100 gm fruit candies	50	75	100	400	450	475	500	525	550	575
250 gm fruit candies	50	75	100	125	150	175	200	275	250	275
250 gm jars Pawpaw jam	250	300	350	400	450	475	500	525	550	575
500 gm jars Pawpaw jam	250	300	350	400	450	500	550	600	650	700
250 gm jars Raspberry jam	25	30	35	40	45	50	55	60	65	70
500 gm jars Raspberry jam	25	30	35	40	45	50	60	65	70	75
250 gm jars Pawpaw in siruep	50	75	100	125	150	175	200	225	250	275
500 gm jars Pawpaw in siruep	50	75	100	150	200	250	300	350	450	500
250 gm jars Mango in siruep	50	75	100	125	150	175	200	225	250	275
500 gm jars Mango in siruep	50	75	100	150	200	250	300	350	450	500
250 gm jars Mango (hot chutney spice	250	300	350	400	425	450	475	500	525	550
500 gm jars Mango(hot chutney spice	250	300	350	400	450	500	550	600	650	700
250 gm jars pawpaw chutney spice	50	75	100	125	150	175	200	225	250	275
500 gm jars pawpaw chutney spice	50	100	150	200	250	300	350	400	450	500
250 gm jars Tamarin(Hotchutney spice	50	75	100	125	150	175	200	225	250	275
500 gm jars Tamarine (Hot chutney spice	50	100	150	200	250	300	350	400	450	500
250 gm jars Sweet Chilli in Oil , spices	250	300	350	400	450	475	500	525	550	575
500 gm jars Sweet Chilli in oil, spices	250	300	350	400	450	500	550	600	650	700
50 pkt coconut ball candy	50	60	70	80	90	100	105	110	115	120
100 gm coconut ball candy	50	60	70	80	90	100	110	120	130	140
	2,325	3,040	3,755	4,795	5,560	6,300	7,040	7,825	8,610	9,345
sub-total gross revenue										
(@ av.selling price 600 vatu fruits, spices,coconut/kg	1,395,000	1,824,000	2,253,000	2,877,000	3,336,000	3,780,000	4,224,000	4,695,000	5,166,000	5,607,000
Total volume (kgs of processed product)	20,915	36,360	52,190	68,952	87,471	108,315	132,011	158,957	191,573	230,418
Total Revenue	35,672,500	63,014,000	87,877,500	114,926,100	145,361,580	180,134,004	219,906,455	266,133,692	321,845,549	388,565,164

Costs

Year

Fixed costs

Capital costs

Land and buildings

Equipment

Sub-total

	1	2	3	4	5	6	7	8	9	10	11
Land and buildings	87,300,000										
Equipment	120,000,000					60,000,000				80,000,000	
Sub-total	207,300,000	-	-	-	-	60,000,000	-	-	-	80,000,000	-

Overhead costs

utilities

telecommunications

accounting and audit fees

advertising and promotion

management and administration (4 people)

repair and maintenance

vehicle operating costs

Sub-total

utilities	6,500,000	6,825,000	7,166,250	7,524,563	7,900,791	8,295,830	8,710,622	9,146,153	9,603,460	10,083,633	10,587,815
telecommunications	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
accounting and audit fees	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000
advertising and promotion	3,000,000	3,150,000	3,307,500	3,472,875	3,646,519	3,828,845	4,020,287	4,221,301	4,432,366	4,653,985	4,886,684
management and administration (4 people)	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000
repair and maintenance	5,000,000	6,000,000	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000
vehicle operating costs	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000
Sub-total	31,600,000	33,075,000	34,573,750	35,097,438	35,647,309	36,224,675	36,830,909	37,467,454	38,135,827	38,837,618	39,574,499

Total fixed costs

Total fixed costs	238,900,000	33,075,000	34,573,750	35,097,438	35,647,309	96,224,675	36,830,909	37,467,454	38,135,827	118,837,618	39,574,499
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Year	1	2	3	4	5	6	7	8	9	10	11
Variable costs											
Payments to farmers											
<u>Nuts</u>											
Nangai nuts @ 250vatu/kg of kernel processed	2,143,750	3,700,000	4,810,000	6,253,000	8,128,900	10,567,570	13,737,841	17,859,193	23,216,951	30,182,037	39,236,648
Navele nuts @ 200 vatu/kg of kernel processed	440,000	820,000	1,200,000	1,450,000	1,690,000	1,930,000	2,170,000	2,410,000	2,650,000	2,890,000	3,100,000
Natopq nuts @ 300 vatu of kernel processed	60,000	120,000	180,000	240,000	300,000	360,000	420,000	480,000	540,000	600,000	660,000
Peanuts nuts @ 110 vatu of kernel processed	231,000	462,000	924,000	1,386,000	1,848,000	2,310,000	2,772,000	3,168,000	3,630,000	4,092,000	4,356,000
Subtotal nuts	2,874,750	5,102,000	7,114,000	9,329,000	11,966,900	15,167,570	19,099,841	23,917,193	30,036,951	37,764,037	47,352,648
<u>Kava</u>											
@ 2000 vatu/kg processed	8,700,000	16,000,000	22,300,000	29,000,000	35,700,000	42,600,000	49,300,000	56,000,000	62,700,000	69,000,000	69,000,000
<u>Chilli</u>											
@ 1500 vatu/kg dried chilli processed	435,000	780,000	1,155,000	1,530,000	1,942,500	2,355,000	2,767,500	3,180,000	3,592,500	4,005,000	4,005,000
<u>Pepper</u>											
@ 700 vatu/kg dried pepper corn processes	612,500	910,000	1,592,500	2,082,500	2,800,000	3,517,500	4,252,500	4,987,500	5,810,000	6,667,500	6,667,500
<u>Total fruit</u>											
@ 100 vatu/kg fruit processed	232,500	304,000	375,500	479,500	556,000	630,000	704,000	782,500	861,000	934,500	1,024,500
Total payment to farmers	12,854,750	23,096,000	32,537,000	42,421,000	52,965,400	64,270,070	76,123,841	88,867,193	103,000,451	118,371,037	128,049,648
Direct payments to processing labour											
@ 100 vatu/kg processed	2,091,500	3,636,000	5,219,000	6,895,200	8,747,060	10,831,528	13,201,136	15,895,677	19,157,281	23,041,815	27,118,659
Materials											
Packaging @250 vatu kg processed	5,228,750	9,090,000	13,047,500	17,238,000	21,867,650	27,078,820	33,002,841	39,739,193	47,893,201	57,604,537	67,796,648
Ingredients @ 56 vatu/kg processed	1,171,240	2,036,160	2,922,640	3,861,312	4,898,354	6,065,656	7,392,636	8,901,579	10,728,077	12,903,416	15,186,449
	6,399,990	11,126,160	15,970,140	21,099,312	26,766,004	33,144,476	40,395,477	48,640,773	58,621,278	70,507,953	82,983,097
Total variable costs	21,346,240	37,858,160	53,726,140	70,415,512	88,478,464	108,246,074	129,720,455	153,403,643	180,779,010	211,920,804	238,151,404
Total cost	260,246,240	70,933,160	88,299,890	105,512,950	124,125,773	204,470,749	166,551,363	190,871,097	218,914,837	330,758,422	277,725,902

Year	1	2	3	4	5	6	7	8	9	10	11
Total Revenue - Total costs	(224,573,740)	(7,919,160)	(422,390)	9,413,151	21,235,807	(24,336,745)	53,355,092	75,262,595	102,930,712	57,806,742	179,562,461
IRR	9.1%										
NPV (rate of interest 10%)	(13,777,065)										

D. The availability of nangae nuts in Vanuatu: Survey Results

Background

Data on the availability of nangae nuts is sketchy and somewhat contradictory. Evans (1996, p.17)⁹ gave an estimate of 300,000 trees in Vanuatu, noting that he 'erred on the conservative'. Charles Long Wah (South Pacific Nuts/Kava Store, SPN/KS) asserts that the number is over 500,000, yet cites lack of supply as the constraint on his output for retail sales and embarked on a campaign to encourage plantings. He states that 75,000 seedlings were distributed. Lack of delivery can however be due to many factors besides the actual quantity that trees produce.

The tree population can be put into three broad categories: those in or near present villages and easily accessible, those growing at old, abandoned village sites and those scattered in forests. How much of Evans' estimate falls into each category is not readily deduced and, effectively, only the first is relevant to commercial development.

Trees may yield 50 to 300 Kg per annum of NIS (dried nuts in shell) but an average of 100 Kg p.a can be assumed (Evans, p.14). For practical purposes, the weight of kernels in testa (KIT) can be taken as one-sixth of NIS. These figures give a basis for comparing tree numbers with data on receipts by processors of NIS and KIT.

Pacific Nuts Ltd., a company that processed nuts at Luganville in 1997-9, estimated that commercially available nuts (from some but not all of the northern islands) was no more than 200 tonnes of KIT (equivalent to 1200 tonnes of NIS). An estimate by SPN/KS is half that figure but the collection areas are not the same: they overlap, with bias towards different areas. Considering that Evans' estimate could yield 30,000 tonnes of NIS p.a. (5000 tonnes of KIT) and SPN/KS's estimate even more, clearer information is needed.

The Survey Carried Out

Only a brief sampling could be done. Three areas on Malekula, together with the east coast of Espiritu Santo, were chosen for simple counting of trees readily accessible to villagers. Heavy rains washing out river crossings prevented completion in two of the areas.

Malekula

South-West Bay: A reliable villager counted trees at the five villages and telephoned the total to a contact in Port Vila. Total counted: **17,692 trees**.

North-West: A grower's co-operative arranged counting but only nine of the 20 villages could be surveyed. Results were telephoned. Total counted: **7,218 trees**.

North-East: A villager counted trees at five of the 12 villages. Results were telephoned. Total counted: **4,696 trees**.

⁹ Evans, Barry. 1996. Overview of resource potential for indigenous nut production in the South Pacific. In Stevens et. al. (eds), South Pacific Indigenous Nuts. ACIAR Proceedings, No 69.

Interpretation By extrapolation, the tree populations in the North-West and North-East can be estimated at 14,000 trees and 10,000 trees respectively. Between these two areas are another 20 villages said to have similar populations, so that an approximate total for the whole of the north (Leviamp to Litzlitz) would be at least **35,000 trees**.

South-West Bay is known for its large number of trees and along the south coast from there to the south east, the tree populations are said to be of density similar to that in the north. It would be conservative to use a figure of double the 17,500 at South-West Bay for the whole area. This means a further **35,000 trees**.

Nangae is comparatively sparse on the west coast from Leviamp to South-West Bay and the area can be ignored for the present purpose. On the east coast, villages are fewer than those of the north and south and might (conservatively) be estimated to add a further **5,000 trees** to the total.

By this (admittedly rough) method, a total of at least **75,000** readily accessible trees is estimated for the whole of Malekula.

East Coast of Santo. A Forestry Department officer spent one week arranging for counting and collecting the results from 23 villages. The data indicates that some villages provided accurate counts but others gave broad estimates. The total was **16,596 trees**.

The information is of variable reliability but gives a broad indication of tree populations. It can be summarized as follows.

Island/Area	Estimated no. of nangae trees	Estimated nut yield, tones p.a	
		NIS	KIT
Malekula	75,000	7,500	1,250
Santo, east coast	16,500	1,650	275

Comparison with Commercial Deliveries

Deliveries by villagers to two processors, Pacific Nuts Ltd and SPN/KS, and comparison with survey data are given below.

Island/Area	Pacific Nuts, 1997/8			SPN/KS, av. of all yrs		
	NIS	KIT equiv.	% of survey est of prod'n	NIS	KIT equiv	% of survey est of prod'n
Malekula	9.5	1.6	0.13	180	30	2.4
Santo, east coast	31.6	5.3	1.9			
Santo, other	4.6	0.8				
Santo, all				40	6.7	(2.4)
All other sources	10.3	1.7		334	55.7	
Totals	56.0	9.3		554	92.3	

Deliveries to Nuts'n'oils in 2007/8 were 11 tonnes KIT, representing about 1.9% of the estimated tree population on north Malekula and less than 1% of the whole of the island.

Appraisal

Until processors began buying nuts, production from trees was largely for home consumption, which will continue. In the short term at least, a large proportion of Vanuatu's nangae trees are growing beyond the reach of processors. Therefore only a small proportion of actual production will reach processors. However, if even 10% of production in reasonably accessible areas is sold to processors, the annual total may be at least five times the greatest deliveries hitherto.

Considering that there are new plantings specifically intended for commerce, 500 tonnes of KIT per annum should not be difficult to achieve, provided that there is a market for the finished product.

E. European Commission Novel Food Act. Determination of the Importation of Nangae from Vanuatu

9.1.2001

EN

Official Journal of the European Communities

L 4/35

COMMISSION DECISION

of 19 December 2000

on refusing the placing on the market of 'Nangai nuts (*Canarium indicum* L.)' as a novel food or novel food ingredient under Regulation (EC) No 258/97 of the European Parliament and of the Council

(notified under document number C(2000) 3888)

(Only the French text is authentic)

(2001/17/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Regulation (EC) No 258/97 of the European Parliament and of the Council of 27 January 1997 concerning novel food and novel food ingredients⁽¹⁾, and in particular Article 7 thereof,

Having regard to the request submitted by Mr Y. Jobert on behalf of Pacific Nuts Ltd, PO Box 429, Santo, Vanuatu to the French competent authorities on 9 December 1998 for placing 'Nangai nuts (*Canarium indicum* L.)' on the market as a novel food or novel food ingredient,

Whereas:

- (1) The initial assessment report drawn up by the French competent authorities concluded, based on the information provided that the product is safe for human consumption and could therefore be authorised.
- (2) The initial assessment report was forwarded by the Commission to all Member States on 7 April 1999.
- (3) Within the 60-day period laid down in Article 6(4) of the Regulation, reasoned objections were nevertheless raised by other Member States so that an authorisation decision is required, to be taken in accordance with the procedure laid down in Article 13 of the Regulation.
- (4) An additional assessment was carried out in accordance with Article 7 of the Regulation. The Scientific Committee for Food adopted an opinion on 8 March 2000, which stated that data necessary for the assessment of the safety of the product are lacking. Therefore the product should not be authorised.
- (5) The applicant was given the opportunity to provide additional information.

- (6) Information that 'Nangai nuts' (or synonymously 'Kenari nuts') were consumed in the Netherlands to a significant degree was examined by the Dutch authorities who could not find such nuts. Thus it was confirmed that 'Nangai nuts' have not been consumed in the Community to a significant degree before Regulation (EC) No 258/97 entered into force. Accordingly Nangai nuts should be considered as a novel food within the meaning of Regulation (EC) No 258/97.
- (7) As it has not been demonstrated that the product complies with the criteria laid down in Article 3(1) of the Regulation, it should not be placed on the market in the Community.
- (8) The measures provided for in this Decision are in accordance with the opinion of the Standing Committee for Foodstuffs,

HAS ADOPTED THIS DECISION:

Article 1

'Nangai nuts (*Canarium indicum* L.)' may not be placed on the Community market as a food or a food ingredient.

Article 2

This Decision is addressed to Mr Y. Jobert, La Meillade No 65, F-34150 Montpeyroux, acting on behalf of Pacific Nuts Ltd.

Done at Brussels, 19 December 2000.

For the Commission

David BYRNE

Member of the Commission

⁽¹⁾ OJ L 43, 14.2.1997, p. 1.